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ABSTRACT

These proceedings consist of 43 presentations clustered into these key areas: position, strategy, contribution, and future issues; diversity of participation and contexts; issues in the workplace and learning settings; question of practitioners work; and questions of knowledge and methodology--all related to the themes of quality and diversity. The presentations are preceded by "Editorial Introduction: Quality and Diversity for Vocational Education and Training (VET) Research" (Kell) and "Keynote Address: Advancing VET Research: Dilemmas and Directions" (Seddon). The papers are "Senior-Secondary Curriculum Choice and Entry into Postsecondary VET" (Ball, Lamb); "Measurement of Learning Conversations" (Barratt-Pugh); "Women, Business, and VET" (Barrett); "Aging Well" (Beckett et al.); "Researching by VET for VET" (Bloch, Hoggard); "Industry Learning" (Bound, Owen); "What Is Missing from Innovative Practice in VET?" (Brown); "Recruiting for Renewal?" (Buckingham); "'Don't Be Too Polite!'" (Butler,

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Ferrier); "Quality and Diversity in VET Research" (Cairns); "Staff Development Provisions for Teachers/Trainers in the VET Sector--Overview" (Choy et al.); "Joining the Dots" (Clayton); "Making Judgements" (Down, Hager); "Research on Flexible Learning/Delivery" (Evans, Smith); "Research Journey" (Evans); "Hiatus in VET Research" (FitzSimons); "What Impact Is Implementing a Quality System Having on the VET Classroom?" (Gibb); "Work-Related Skilling in Primary and Secondary Schools in Papua New Guinea" (Guy); "Making Judgments as the Basis for Workplace Learning--Preliminary Research Findings" (Hager, Beckett); "Who's Listening, Who Cares?" (Harper, Hopkins); "Quality VET" (Harris, Simons); "Meaning-Making in Qualitative Research" (James, Mulcahy); "Student Readiness to Learn Via the Internet" (James); "Learning in Small Business" (Kilpatrick, Crowley); "Evaluating Flexible Learning Materials" (MacCann); "Place of VET Strategy Within the Overall Planning Framework of Government" (Maglen, Hopkins); "Future Paths and Challenges for Quality and Diversity in VET" (Malloch); "Equity and Local Partnership in VET" (McIntyre); "Research on the Economics of VET" (McKenzie); "What Difference Does a Research Center Make?" (McKenzie); "Different Models of Delivery--Student Outcomes and Students' Perspectives" (Misko); "Working on Curriculum Recommendations for Women Leaders and Managers, 2010" (Nevard); "Longitudinal Study of Outcomes of VET Programs" (Phan); "Seeking the Geek Girls" (Price, Woolley); "Workplace Trainers" (Simons et al.); "When One Survey Is Not Enough" (Smith, Hill); "Research Informing Practice" (Smith); "Internet Delivery for VET Sector Students at UniSA" (Snewin); "What's Happening with VET in Senior Secondary Schools?" (Spark); "Matching Research Methodologies with Organizational Experiences" (Staron); "Value of VET in a Non-Metropolitan Community" (Toms et al.); "Supporting Students in a Flexible Learning Environment" (Twyford); and "Lifelong Learning" (Watson). (YLB)

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Quality and Diversity in VET Research

Proceedings of the second national conference
of the Australian Vocational Education
and Training Research Association, (AVETRA)

Royal Melbourne Institute of Technology
11-12 February 1999

AVETRA

Australia's
national
association
for VET
research

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REFEREED PAPERS

The following papers presented at the conference were refereed before the conference to comply with DEETYA E1 status. A checklist supplied by the editors to the referees was the basis for comments communicated to authors.

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Helen Bound Christine Owen	Industry Learning: Toward A Framework for Future Research
Elizabeth Buckingham	Recruiting for Renewal? Social Controls and Spaces in the Apprenticeship to Mathematics
S. Choy R Pearce John. Blakeley	Professional Development Provisions for Teachers/Trainers in the VET Sector
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FOREWORD

The Australian Vocational Education and Training Research Association held its second conference in Melbourne on 11-12 February 1999. Establishing a regular conference series is a bit like starting a career as a novelist. A new novelist often starts a writing career by bringing out an attention-getting, stormy book which bursts onto the scene and sets a new agenda. Its subject matter is often propelled by issues of heartfelt importance to the author.

AVETRA's first conference was like that – a forum for robust, sometimes edgy debate on matters as fundamental as "what does research mean in the VET context". How does it differ, if at all, from research done in universities? Should the same techniques, standards and means of dissemination be used, or should there be something distinctive about VET research? If so, what should these distinctive features be? At the same time the first conference was a forum for the AVETRA organisation itself to thrash out its agenda. What should AVETRA be and do? To what extent should it function as a "pure" research organisation, a lobby group, a tool of policy makers, and so on? In the language of organisation theory, a lot of forming and storming went on at the first conference.

The second novel is often a dicey business. The author needs to move past the achievement of the first book and get to grips with a the tasks ahead. To revert to the language of organisation theory, the time for forming and storming has largely passed and norming and performing become the primary concerns.

So it was with the second AVETRA conference. More perhaps even than in the first year, the real business of the association got underway. AVETRA is a professional association, and the role of an association is to represent and defend the interests of practitioners, to promote the field of practice, establish its identity and set codes of conduct, to support training and professional development, and so on. This was echoed in the conference papers themselves. Their themes emerged early. They were closely interlinked and often politically focussed:

- the role of research in broadening the policy agenda as well as developing new knowledge and theory,
- research aimed at discerning and furthering the needs of diverse groups and political interests,
- issues in pursuing a collaborative research agenda,
- maintaining the balance between making the research useful to those who commissioned it as well as to independent researchers and practitioners.

Terri Seddon in her keynote presentation on the 'VET theme park' summed up key dilemmas which appeared in many of the papers, and seem set to remain so for a long time into the future. She and others emphasise that AVETRA needs to be willing to take up the challenges of demonstrating the direction, funding and relevance of VET research, and to be a place where the politics and power relationships inherent in the VET arena can be critically questioned. If not here, where else can this be done? It has to be said plainly, if AVETRA doesn't play this role, it can hardly be worth the name of a professional association. Peter Kell and Mary Kalantzis provided "mid-way point" guidance on other major issues as they came to light.

At the same time, the second conference made it clear that the VET research field is mature enough that longitudinal studies could be presented, as well as exploratory or preliminary findings on issues such as quality in research, equity issues, the dilemmas of learning within and for industry. Diverse techniques - qualitative approaches as well as quantitatively and economics-founded studies - were brought to bear on issues of curriculum, the measurement of learning, and new technologies for VET delivery. Many researchers took time to contemplate their own dilemmas in carrying out their tasks, producing papers on collaborative research, negotiation of research venues, research on the road, research in remote and special communities, the nature of rigour in newer research techniques, and so on.

The final plenary session was entitled "Where do we want to be?" There could be no clearer signal that the AVETRA community has moved into well into the performing stage, setting goals and directions and pursuing them with vigour. We hope you enjoy reading the papers, and invite you to reflect on what new themes might be added to the growing list in future years.

Our thanks are due to Delia Mazzina and Karen Whittingham for their efforts in collecting, formatting and preparing the papers for publication.

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EDITORIAL INTRODUCTION
QUALITY AND DIVERSITY FOR VET RESEARCH

Peter Kell
Conference Organiser

The themes of the 1999 AVETRA Conference emerged from a forum discussion during the 1998 conference. The discussion at the 1998 conference suggest there was a wide spectrum of views about the nature and quality of VET research. There was also a considerable spread of views about what constituted VET research and what might be the most effective research for influencing policy makers.

The discussion seemed to be polarised between two very different views of research. One view suggested that the quality of research should be evaluated in the context of more established and traditional methods of research associated with academic and university based research.

Others challenged this view and suggested that VET research serviced a range of end users and that quality may determined be the extent to which the end users were satisfied with the outcomes of the research. In the discussion it became clear that there were wide and diverse views on these issues that reflected the workplace and research settings of the AVETRA membership.

The gaps between the views of the academy, the market, the training system and policy makers signposted an opportunity to engage the membership in the 1999 conference.

From this lively discussion the themes for the 1999 conference emerged. The themes were:

- What constitutes quality research ?
- In what ways can value, usefulness and utility be established ?
- In what ways can research contribute to the generation of knowledge and theory ?
- In what ways can research contribute to the broadening policy agenda ?
- In what ways can research met the diverse needs of research clients ?
- In what ways can research develop collaborative structures to support multiple interests of researchers ?
- In what ways can VET research contribute to the generation of new knowledge and theory ?

The themes concerning quality and diversity were entirely appropriate and topical for an organisation going into its second year in the context of discussion on the future of the Australian Research Council and Australian National Training Authority funding of national centres.

The conference sough to map and describe research conducted by universities, TAFE institutes, VET providers, private consultants, unions, teachers, trainers and students to examine the implications of such diversity.

The topics of the key note speakers and the structure of the conference program complimented these themes.

The Opening address by Associate Professor Terri Seddon, Monash University, on *Advancing VET research : Dilemmas and Directions* attracted significant press attention in suggesting that there was a narrowness in purpose of VET research which tended to skew the outcomes towards orthodox policy settings. Her address incorporated important feedback from members on the nature and character of VET research. Her address appealed for a broadening of the research agenda and an opportunity for the exploration new partnerships, new methodologies and new strategies for VET research to prosper.

The address by Professor Mary Kalantzis, RMIT, on *Diversity, Research and VET* looked broadly at the challenges for researchers in the context of diminished state resources. The address analysed the changing nature of the policy themes that subordinate recognition of diversity and voices outside the established policy forums. The address foreshadowed some of the challenges for researchers in expanding the dimensions of the inquiry and research to embrace the message of diversity.

The presentations by members were clustered into several key areas:

- VET Research: Position, Strategy, Contribution and Future Issues.
- VET Research: Diversity of Participation and Contexts.
- VET Research: Issues in the Workplace and Learning Settings.
- VET Research: The Question of Practitioners Work.
- VET Research: Questions of Knowledge and Methodology.

These clusters enabled VET researchers to generate a continuous dialogue during the conference on issues emerging from enterprise based training, professional development for teachers, the training of an aging workforce, vocational education in schools and workbased learning programs as well as the main themes.

The conference was an excellent opportunity for researchers and members of AVETRA to map the field and chart some future directions in VET research with the possibility of informing policy.

Just as important the 1999 AVETRA Conference helped to consolidate the role AVETRA has in shaping and informing the nature and character of VET research in Australia.

MEMBERSHIP FORUM AVETRA 1999

Peter Kell

One of the objectives of the 1999 AVETRA Conference to discuss the broad purpose of AVETRA and what its chief directions in the future might be.

During the first morning of the conference the views of members were sought in a forum. There were over 180 members present at this which represented a one of the largest gathering of researchers, managers of research, end users of research, purchasers of research, research students and VET practitioners.

During the forum several roles were identified by members that AVETRA could fulfil in the future.

1. ISSUE IDENTIFICATION ROLE

AVETRA is uniquely positioned through the diversity of its membership to identify issues and needs that might be the subject of research. This role would be important in identifying emerging issues worthy of research.

2. REPRESENTATIONAL ROLE

AVETRA has been identified as having a potential representational role to lobby on behalf of the general benefit of AVETRA members and VET research in general. The role would include representations to government, funding agencies, VET systems and industry bodies.

3. THE SPONSORING ROLE

One of the key issues identified was the need to provide opportunities to enhance the capacity of VET research through measure to sponsor members. This could happen through

- Professional development programs for VET researchers.
- Sponsored projects funded by AVETRA.
- Research mentoring programs.

This role has been identified as assisting develop collaborations and partnership between members to facilitate a seamless approach to research

This role also requires the commitment of AVETRA resources to support projects.

4. DISSEMINATION ROLE

This role positions AVETRA as a nationally important source of information on VET research and research data. The prime strategies associated with this role are the

- The AVETRA annual conference.
- The AVETRA newsletter R*esearch Today* to members.
- *The Australian and New Zealand Vocational Education Research Journal.*
- The AVETRA online web page.

In this role AVETRA was seen as crucial in showcasing the work of VET researchers.

The forum was valuable in identify the directions that the membership of AVETRA saw as vital in developing supporting the development of quality research in vocational educational research. The feedback from the forum provided an important focus for the activities of the AVETRA executive during 1999.

KEYNOTE ADDRESS:

ADVANCING VET RESEARCH: DILEMMAS AND DIRECTIONS

Terri Seddon

Keynote paper presented at the second annual conference of the Australian Vocational Education and Training Research Association, February 1999

At the first annual conference of AVETRA, held at University of Technology Sydney, a number of questions were raised about research in vocational education and training: What was research in VET? What kinds of methodology were permissible? Who could do research? To a large extent these questions were couched in relation to AVETRA and what counted as acceptable practice within this new professional organisation of VET researchers.

The second annual conference of AVETRA, held at RMIT in Melbourne, was an appropriate time to reflect on these questions, to canvas the dilemmas experience by AVETRA members and to clarify directions for the future of research in VET. My paper provided the opportunity to consider these issues in more depth. I organised the paper as a way of reflecting concerns in AVETRA back to the membership, making my contribution a vehicle for feedback and for thinking about the work that might be tackled within AVETRA to advance VET research.

Importantly, my aim in shaping the paper in this way was to permit multiple voices within the AVETRA membership to be heard in the debate about VET research as a way of clarifying the profile and enhancing the capacity of this VET research community. To this end, first I conducted a straw poll of AVETRA members by email in late 1998, asking for views on the following questions:

- What are the dilemmas which face our field of research in VET?
- What do you see as the contentious issues?
- Have we 'deviated' from original ideas about building an effective organisation and culture which supports VET research?
- What future directions do you think we should be pursuing, and how?

Feedback from this simple information-gathering technique was analysed to identify the most commonly expressed concerns and these were illustrated with direct quotes from the return emails that I received.

Secondly, these data were integrated into a broader analysis based upon my longstanding research on the restructuring of education and training (Seddon 1993; Seddon, Angus and Brown 1998), together with particular recent studies of research in vocational education and training (Seddon 1997; Seddon 1999; Seddon and Malley 1998). I make this point to show that the presentation was rooted in a broad educational and social science research framework. It was not simply an idiosyncratic opinion about research in VET.

MEMBERSHIP CONCERNS

Twenty two responses were received from the email straw poll - not a large response but voices from the membership who could find the time and energy to respond to my questions in the rushed days before Christmas. Table 1 shows the distribution.

Location	Frequency
TAFE	7
Universities	8
Industry/ITABs	2
Enterprises	1
Other#	4

# includes NCVER, government agencies, unions

Four concerns were identified from these responses. I list these below, together with some illustrative quotes:

- **Establishing and maintaining the integrity of research in VET**

  Constraints of the research agenda imposed by funding bodies. Where is the time for creative work, genuine reflection, consolidation of 'unpopular' thinking?

  If you are employed in the VET sector, especially as a public servant, what happens if what you find out is not supportive of government policy?

  There is blind systemic resistance to accepting research outcomes which are at odds with the systems view.

  The interventionist state appears more interested in commissioning research for the purpose of legitimising its own policy agenda rather than using it as a tool of inquiry.

- **The dilemmas associated with the institutional and funding arrangements of VET research**

  Incestuous interlinking of ANTA/NREC/NCVER would seem to preclude significant critical examination of VET.

  The ways in which public research funds have been distributed - massive amounts to a few institutions, the cutting out of experienced researchers ...

  In VET research there seem to be a few established players who succeed in tenders and it appears to be very difficult to break in

  While funding for VET research is so short term and ad hoc I can't see a decent long term future for VET research. It takes ages to build up infrastructure ....

- **Differences and divisions within the VET research community**

  From where I am currently positioned (as a full time research student, and as a TAFE manager) the biggest issue is that many of my colleagues appear to have limited idea about what research is or involves, do not think research is important or relevant to VET practitioners' 'real work'.

  The lack of understanding of the non-University members of the ways in which academics need to work if they are to bothered with research in VET.

- **The character of VET research**

  The TAFE commercial imperative and the university research quantum imperative work against genuine research partnerships.

  Higher ed researcher have brought their own culture and debates about what counts as quality research.

  How do we encourage exploration of issues by those in a good position to respond to changes if research is done by researchers who are remote from the 'coal face'?

  Is research the province of the few? What qualifies involvement?

There is a problem of case study burn out and 'researched to death'.

Lack of dissemination leads to 'reinventing the wheel'.

What is going on here? What is generating these concerns in the membership? What might be done to address them?

Understanding change in VET research

In 1997 I mapped changes that were occurring in VET research drawing on theories of institutions and institutional design (Seddon 1997). Last year Elaine Butler (Butler 1998) presented another keynote address that continued the work of analysing institutional change in VET. We both argued that vocational education and training is currently subject to a process of institutional redesign. Change is occurring partly as a result of broad trends associated with globalisation and changes in the nation state, and partly because of more local politics in which governments have taken up an activist stance in order to restructure vocational education and training towards particular ends. This restructuring is evident in the 'permanent revolutions' that have been occurring over the last 10-15 years. It has changed organisational and funding arrangements, and the identities of those who conduct and manage vocational education and training. Not least, restructuring has produced VET research as a recognisable field of activity and constructed a community that can, to some extent, recognise itself as a VET research community. AVETRA is an obvious outcome of both these processes of top down institutional redesign and also more bottom-up processes of community development and recognition.

In thinking about these complex changes in VET, it is helpful to draw an analytical distinction between institutions and organisation. Gary Bouma (Bouma 1998) defines these as follows

> Institutions are sets of norms which apply across a variety of specific organisations. Organisations are structures of social relationship, social actors arranged in positions and roles; usually, but not always, deliberately arranged and designed to achieve some end. Institutions provide normative environments shaping the activities of organisations. (p. 233)

While institutions and organisations have interactive effects, it is possible to crudely delineate institutions as the normative environment that shapes action and organisations as the particular ways in which social actors and relationships are organised.

With this distinction, it is possible to talk about institutions as a kind of normative environment which underpins or is the medium of organisational life. For example, *organisations of education* include schools, TAFE, private education providers, universities and other organisational arrangements that support learning. The *institution of education* is the normative environment concerned with teaching and learning, the norms and values which privilege the formative processes of human development and the co-production of learning and learned individuals (Connell 1995)

In a similar way it is possible to talk about *organisations of research* including research agencies, centres, universities (although these do more than research), research funding agencies, and communities of researchers. These organisations of research are framed by the *institution of research*, the normative environment that values careful investigative knowledge production, creative problem solving and deliberation and dialogue that leads to the discovery of the best that has been thought and said. The particular historical trajectory of institutional and organisational development of research in Australia is crucial to understanding contemporary research in VET.

The institutional and organisational formation of research in Australia

In the post-war period, research was concentrated in universities (and CSIRO) and these organisations were funded and organised to support academic norms and values. Robert

Menzies, for example, described these core values in a speech to Canberra University College in 1939 in the following terms:

> First, the University must be a home of pure culture and learning ...'academic learning' as it is sometimes half contemptuously designated, is one of those civilised and civilising things which the world needs as never before.
>
> Second, the University must serve as a training school for the professions .... A great lawyer must be superior to his technique ... He must see himself as one of the creators or guardians of a developing juristic system whose function in a growing and changing world is to minister constantly to the good and just life...
>
> Third, the University must serve as a liaison between the academician and the 'good practical man' .. it is the almost unknown and badly paid 'pure' scientist who, as a rule, opens the doors through which the Edisons have been able to carry their telephones ... There must be mutuality between theory and practice...
>
> Fourth, the University must be the home of research. This is an impatient age. We want results. The work of research requires infinite patience, precise observation, an objective mind and unclouded honesty...
>
> Fifth, the University must be a trainer of character ...Asquith [said that a university would be judged] ... 'by the degree in which it has helped to raise, to enlarge, to enrich, to complete the true life of the man, and by him and through him, the corporate life of the community' ...
>
> Sixth, the University must be a training ground for leaders ... I notice here and there a disposition to think that the business of a democratic parliament is simply to ascertain and reproduce the current public opinion .. Democracy demands leaders and leadership. It demands leaders who will not be afraid to tell the people that they are wrong and endeavour to persuade and guide them ...
>
> Seventh, the University must be a custodian of mental liberty and the unfettered search for truth ... which so far from being opposed, are complementary: each is essential to the other
>
> (Pennington, 1998)

Universities were the main site of research activity and, more importantly, the place where researchers were trained and licensed. The process of becoming a researcher was a process of socialisation into the norms and values of good research, that work of 'infinite patience, precise observation, an objective mind and unclouded honesty' which occurred as students undertook study for their Masters or Doctoral degrees. This academic culture and organisation of the university framed the practice of research. It also shaped the nexus between research and teaching as a key dissemination mechanism. Academics were not only teachers and researcher, they were what is currently known as *knowledge brokers*, disseminating research through their teaching and community service activities.

At this stage, there was no research function in vocational education and training apart from the investigative work undertaken by government bureaucracies in the course of policy-making. The core business of this sector was teaching. Research was first broached in the Kangan report (1974) and reasserted in the Williams report (1979). Implementation followed with the establishment, in 1981, of the TAFE National Centre for Research and Development. This changed its name in 1992 to the National Centre for Vocational Education Research. This organisation of research existed beyond the universities. Its norms and values encouraged policy-oriented research on behalf of the bureaucracy which needed a research function to inform policy-making. The post-Kangan era also saw limited development of practitioner research in TAFE, supported by the allocation of research funds (eg. CTEC Designated Grants Program) and the development of journals (eg. *Victorian TAFE Papers*) for reporting practitioner research. But these developments were tenuous and did not survive in formal ways .

This preliminary development of research in vocational education and training was part of a wider trend towards diversifying the sites of research beyond the university. Research in VET was paralleled by increased acknowledgment of practitioner research (eg. action research, reflective practice) in school education and in other professions and workplaces. This pluralisation of research and researchers was driven partly by democratising agendas aimed at opening up traditional academic research, partly by changes in the perceived significance of knowledge and research in relation to enterprises productivity and profitability, and partly by the effects of market reform, decentralisation and increased demands for reporting and accountability which have accompanied corporatism and economic rationalism. The effect was to erode the privileged position of the university as both an organisation and a normative force within the institution of research. This has been further intensified by the universities own restructuring, including mass teaching, marketisation, and a growth of research as service provision.

It is only in the 1990s, an era marked by corporatism and economic rationalism, that resources have been made available to support an extended research function in vocational education and training. Such resource allocations have been encouraged by the increased need for local intelligence gathering required to inform decision-making within governments and VET systems and enterprises. Research in VET has been shaped, not by academic norms and values characteristic of universities, but by these policy priorities, coupled with the advice of researchers who emphasised: the importance of applied research, the need to service a variety of end-users and the value of integrating academic research into the prevailing forms of VET research services (McDonald et al. 1992). The direction was towards an innovative *interactive* research. As Kearn and Papadopolous (1993) suggested, the emerging pattern of VET research linked problem or client-oriented applied R&D with traditional academic research in ways which encouraged the interaction of each tradition for mutual benefit. However, they note,

There is a critical challenge for the R&D system in adjusting to the major changes which are currently occurring in VET in ways that protect the norms, values and aspirations of research while at the same time contributing to the reform objectives. (p 38)

The institutionalisation of an extended research function in VET was achieved, firstly, through the formation of the ANTA Research Advisory Council and, since its disestablishment in 1996, in the formation of the National Research and Evaluation Committee (NREC). Both these agencies steered research in VET by setting research priorities and allocating funding in ways which supported the development of interactive research activities, integrating VET practitioners, policy-oriented researchers and academic researchers into the existing pattern of VET research servicing of government and industry. The role of ANTARAC in stimulating increased activity in VET research has been turned, with the advent of NREC, to the question of more effective concentration and coordination of VET research. Now, ANTA allocates funding to: pay for private research consultancies; support four ANTA research centres, and support research targeted on national research priorities by individual researchers and other research agencies. These last funds are allocated through NREC and administered by NCVER.

In 1997 I likened this institutionalisation of VET research to the development of a 'theme park'. In less controversial terms, it can be seen as the development of a social space within which a variety of different groups with different interests in, and expectations of, both research and vocational education and training are coming together. The formation of this VET research space has been largely framed by the needs of government in both administering VET and in driving reform within a policy environment that affirms markets and a small steering role for the state. This has meant that VET research has been framed within administrative/bureaucratic norms but operationalised in an interactive way which endorses the contribution of traditional R&D and academic researchers in dialogue with research funders and end-users.

In practice, VET research has been organised in a way that consolidates a policy-oriented research capacity in VET. This has been achieved by tying research closely tied to government priorities through funding particular researchers (consultants, specific university-based research centres, and individual researchers) who provide research services to identified end-users. But this official endorsement of VET research has also encouraged a growing clamour for, and participation in, research related to vocational education and training by other individuals and groups within interests in vocational education and training and/or research. VET practitioners, other researchers, research agencies, enterprises and systems are now affirming the need for research in vocational education and training - and often concerned with issues other than those formally endorsed as government priorities.

The upshot of this historical development is the emergence of VET research as a social space which institutionalises normative conflict between subgroups - VET practitioners and decision-makers, policy-oriented researchers, academic researchers, industry and bureaucrats whose conception of research is framed by different norms and values. As a result, the broad normative frames of VET research that have been sponsored by government, which see research as a process of gathering intelligence to inform policy or enterprise decision-making, are contested, questioned and debated by subgroups within the VET research community with different views of research.

The concerns of the VET research community: historical roots

This historical development of the normative frames and organisations of research in Australia help to account for the concerns identified by some of the AVETRA membership.

Because VET research has been constructed through administrative/bureaucratic processes as a social space in which the knowledge production efforts of industry, academy, and the VET sector can come together to inform decision-making and enhance learning productivity of vocational education and training, there are inevitably divisions within the VET research community. As one respondent noted,

> Is 'we': researchers from universities who see VET research as a lucrative market, an area where they can be big fish in a small pond? VET researchers in TAFE Institutes which want research outcomes that give the Institute a leading edge? Or practitioner researchers from both sectors who see research informing practice and assisting educative processes?

The fact that the VET research community is all of these groups and more - it also includes policy-oriented researchers and consultants who directly service government research priorities and those bureaucratic/administrative agencies that determine research priorities and orchestrate government sponsorship- helps to explain concerns about the divisions in the VET research community expressed by respondents to the straw poll. The historical institutionalisation of research, firstly within the academic norms of universities and then in a range of other sites in which priorities affirm other norms and values , also helps to explain some of the suspicions between subgroups in the VET research community. It is almost inevitable that in this early stage of the innovative interactive model of research there are concerns and suspicions about whose interests are being served in VET research, particularly in relation to funding.

The fact that the social space of VET research and the VET research community has been constructed and shaped by government policy and funding arrangements helps to explain concerns about the role of government and the way government agencies have both steered and sought to control VET research. This suspicion of government has been intensified by the way government authorities have responded to research in VET. The field abounds with stories in which research findings have been sanitised, research reports have remained unpublished and outside the public domain, and of researchers experiencing personal costs - even personalised criticism - because their research is sensitive or runs against the prevailing policy agendas. And despite a succession of serious and fair-minded commentaries and constructive critiques (Stevenson 1992; Fooks 1997; Fooks, Ryan and Scofield 1997; Meyer 1994; Yeatman 1994), there appears to have been little visible take-up or addressing of these concerns by government.

Inevitably, these concerns about control extend to more general unease about the integrity of VET research. A number of respondents emphasised the importance of research 'without fear or favour'. As one respondent noted:

> There is still opposition in the official policy-making organisations, such as ANTA, to real research as opposed to the narrow confirmatory view that predominates. Until the official view expands, the research community will continue to be the whipping girls and boys.

Another commented on the way research became restricted by self-imposed constraints as well as explicit regulation of research:

> There are three levels of restraint: self-imposed restraint because you have the need to get your next research contract in mind; censorship of reports by commissioning bodies; and pressure or censorship to conform to 'popular' ideas by institutions/employers.

Alongside these concerns, respondents identify critical contextual factors that constrain research in VET:

> Political interference and therefore change is often so rapid that it makes effective research very difficult. This raises the spectre of compromised standards, thoroughness and integrity in research in the name of expediency, and funding constraint ... A vicious circle.
>
> The sector needs non-trivial research yet the time frames of funded projects seldom allow it. Then there are the problems of trying to isolate cause and effect where there are so many variables. Almost everything we do is major research and time delays typically occur.
>
> The higher education sector has access to funds which seem to be unavailable to the VET sector. This includes ARC grants which might be a non issue, but also NREC and ANTA moneys which seem to go the higher education in preference to the non-higher education sector. It seem that this is largely based on past performance of individual researchers in the higher education sector and the needs of the funding bodies to be confident that the funds will produce results.
>
> There needs to be a succinct description of the current set-up for VET across the country - who is doing it, how they are funded, how research subjects are arrived at , what happens to the research after completion ie any evidence it makes a difference. VET is such a politicised environment that such a survey is a necessary first step to establishing an effective research culture in VET because we need to analyse the current situation against a set of criteria for what supports an effective VET research culture - and what works against it
>
> It should be recognised that the needs and expectations of the two sectors (university and non-university) are different. One is not superior to the other and I feel that this issue needs consideration. Both sectors need to learn to listen. After all, it is only through cooperation that it is possible to get the best outcomes. AVETRA should have a central role in developing guidelines that can help in organising a win-win outcome for each group and in promoting the strengths of both sectors in research!

Future prospects

The establishment of AVETRA is an important step in this developing social space of interactive VET research. Yet its formation mirrors the complexities of the broader field, particularly in the institutionalisation of official and other research norms and agendas. Gregor Ramsay was the midwife of AVETRA and it has been nurtured by Leo Maglen, Chris Robinson, Karen Whittingham and the rest of the AVETRA executive. As an organisation it has the potential to create a valuable forum in which the concerns and divisions of the VET research community can be worked through. This point was made over and again in the feedback.

The challenge that AVETRA faces is how it will be located within the social space of VET research. Will it exist within the bureaucratic/administrative norms of government and the bureaucracy? Or will it exist as a more independent agency with its own identity, commitments and vision for research, and willing to assert its voice/vision in the contemporary politics of research/VET research?

This latter option requires AVETRA to organise in a way which gives its diverse membership voice, and encourages members to speak in their diversity, in order to develop a truly interactive research identity that can assert the legitimate research interests of the membership. This kind of organisation should not mean that any of the subgroups within AVETRA capitulates to any other but that there is learning on all sides to clarify norms and values of research that AVETRA can advocate and to enhance the capability of diverse researchers working in and around vocational educational and training.

There are now a growing body of resources that address the character of interactive VET research that can be used to chart a course for the future, both for AVETRA and for research in vocational education and training more generally. They, for example,

ASSERT THE INTEGRITY OF RESEARCH

> The research mandate must be to think the unthinkable, to reassemble accepted truths into new patterns of meaning, and to identify the sources of problems newly emerging and patterns of action and organisation which hardly exist at present. (OECD, 1995)
>
> Research should be directed at finding out what is really needed, finding out what is good and bad, and what works best, regardless of the interests of the sponsoring organisation. (Meyer 1994)

ACKNOWLEDGE PLURALITY IN RESEARCH APPROACHES AND STANDARDS OF GOOD PRACTICE

> VET research has to be multidisciplinary. It cannot be the territory of one discipline, research paradigm or methodology. All should have a place in VET research, the only qualification being that the research should be as rigorous, objective and ethical as we can possibly make it (Maglen 1998)
>
> There are advantages in conducting research in different locations because they each have their own culture, history, reward systems and orientations to research, creating different research outcomes. (Selby Smith et al. 1997)

ENDORSE RESEARCH AS AN OPEN, DELIBERATIVE PROCESS.

> If research is to 'test' certain propositions, or to discover new things about the world, then it must be open to new possibilities, must be capable of responding to challenges to the prevailing world view. (Edgar 1996)
>
> The goal of research is not to find a right answer but to be a vehicle for participating in a debate about what is right, a vehicle for many to contribute evidence and fuel public dialogue. (Jackson 1996)
>
> No research can be 'objective' in the sense that it avoids reflecting the value biases of researchers ... So research should always spell out what its underlying values are. Its not so much the 'bias' that should be avoided, but its covering up in pseudo-scientific trappings. (Edgar 1996)

UNDERSTAND RESEARCH AS THE ACCUMULATION OF PUBLIC KNOWLEDGE RESOURCES

> The research enterprise is accumulative. Much research does not stand alone but adds to that which existed before. This stock of knowledge exists as publicly available research products and embodied in people (human capital) (Selby Smith et al. 1997)
>
> There is little evidence that research outcomes are validated in systematic ways. There are no obvious public processes for validating research, nor explicit criteria against which validation might occur and little public discussion of appropriate criteria for judging research in VET ... The danger with such incomplete implementation of the research cycle is that it can act as a disincentive to research in VET. (Seddon and Malley 1998)

SEEK TO CREATE MUTUALITIES BETWEEN RESEARCHERS, DECISION MAKERS AND PRACTITIONERS

> Researchers have an obligation to be committed to the research enterprise, to keep up to date in their field, to maintain the quality of their work and to be willing to engage with their broader communities. Just as decision-makers have an obligation to be engaged with the world of ideas and to think, read and participate in intellectual debate. They cannot expect to make good decisions without thought. (Selby Smith et al. 1997)
>
> Enduring linkages between researchers and research users in VET are based upon mutual esteem and understanding of the contribution of each party. (Selby Smith et al. 1997)
>
> Building a research culture requires organisational change and staff development aimed at creating system-wide and enterprise-based environments that are conducive to research (Seddon and Malley 1998)

These kinds of resources offer a strong basis on which a more effective interactive research can be developed. AVETRA is crucially placed to take up this work. It can engage in research advocacy, encourage a more friendly research environment and support researchers through research training. Through such work, AVETRA can be an autonomous research organisation that works in the best interests of not only researchers in VET but also in the general public interest which seeks cost-effective research to guide understanding and action in vocational education and training.

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MAJOR PRESENTATION BY PROFESSOR MARY KALANTZIS

The presentation given by Professor Mary Kalantzis on day two of the conference will be posted on the AVETRA website at the earliest opportunity.

The address for the AVETRA website is:

www.avetra.org.au

SENIOR-SECONDARY CURRICULUM CHOICE AND ENTRY INTO POST-SECONDARY VOCATIONAL EDUCATION AND TRAINING

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ABSTRACT

The paper analyses the education outcomes of students surveyed in the Australian Youth Survey who undertook year 12 between 1990 and 1994. The paper focuses on the senior secondary curriculum choices that were likely to lead to an apprenticeship, a traineeship or to entry into other TAFE courses during the period 1991 to 1997.

The curriculum was mapped nationally to 20 mutually-exclusive subject groupings, as part of an broader study examining the education, training and employment pathways associated with year 12 curriculum choices. The subject groupings are presented under the broad curriculum groups of 'arts and humanities', 'business studies', 'business studies and humanities', 'business studies and sciences', 'sciences and maths' and 'sciences and humanities'. The methodology used to achieve the mapping is discussed in the paper.

The results of this analysis provide information on the important role played by curriculum choice in senior secondary school for entry to a vocational education and training pathway.

Background

Students currently undertaking vocational education courses have completed more years of schooling than was the case at the start of the decade (Ball and Robinson, 1998). Two-thirds of those aged 20-24 years enrolled in a VET course in 1997 had completed year 12. The increase in the numbers of students in VET who have completed year 12 is a reflection of the increase in apparent school retention rates since the early 1980s. The school retention rate to year 12 rose from 35 per cent in 1981 to 49 per cent in 1986, and then reached a high of 77 per cent in 1992 (Ainley, 1998).

Commensurate with the increase in school retention rates to year 12 has been an expansion in the subject choices available and the curriculum offered in senior secondary school. Given the large proportion of students in the VET system who have completed year 12 it is useful to monitor the areas of the curriculum that are being studied as a precursor to VET studies. It is important to understand the parts of the curriculum that are preparing students for entry to VET and to identify if different patterns of curriculum participation lead to differences in the likelihood of a student entering VET. It is also of interest to ascertain if VET subjects studied in senior secondary school are providing a pathway to an apprenticeship, a traineeship or other VET course.

Data and Methodology

The analysis uses longitudinal data from the Australian Youth Survey (AYS). Respondents to the AYS provide detailed information about their gender, family socio-economic and demographic background, education and training and labour market experiences. For this study, the sixteen year-olds who joined the survey in 1990, 1991, 1992, 1993 and 1994 are tracked annually to 1997 to explore the links between subjects taken in Year 12 and later entry to VET.

Longitudinal surveys provide detailed information on the post-school experiences of respondents. However, the nature of the data means that only historic insights into the effectiveness of the senior school curriculum can be obtained because school curriculums and organisational structures are constantly evolving. This study reports on the outcomes of the curriculum that applied over the period 1990 to 1994. The cumulative post-school educational experiences of students, one year after the completion of year 12, three years after completing year 12, and at age 21[1] are presented. By these ages some students will have had both higher education and VET experiences so some students will be represented in more than one post-secondary education or training category.

MAPPING THE CURRICULUM

As the AYS is a national survey the year 12 subjects recorded in client records relate to the particular system pertaining in the State or Territory where the respondent was a resident during year 12. Details about the nature and level of year 12 subjects over the period 1990 to 1994 were obtained from each state's senior secondary board of studies. Based on this information, a national mapping of the curriculum between 1990 and 1994 was developed.

DETERMINING SUBJECT COMBINATIONS

In the past, research on subject choice and course enrolments has tended to report on individual subjects or course types based on key learning or subject areas. Post-school education and labour market outcomes, however, are likely to reflect the effects of a combination of a diversity of subjects rather than individual subjects.

Statistical clustering techniques were used to derive the Year 12 subject combinations. Preliminary analyses were undertaken using both 'principal components' analysis and 'tree' based statistical modelling of 70 identified subjects. Twenty different mutually exclusive groupings of subjects were distinguished as representing the most commonly selected groups of subjects. Students were then allocated to the group in which they had the highest number of subjects — providing at least three subjects were taken from that group. As English is a compulsory subject in most states it was not included as a subject in the analysis.

PROBIT REGRESSIONS

Statistical analysis was conducted using probit regressions to determine if the curriculum undertaken in senior secondary school makes a significant difference in terms of entry to an apprenticeship, a traineeship or to other TAFE courses. The data was 'stacked' across the five years of data to create a cross-sectional time-series database. Each subject combination was represented by a dummy variable, namely,

$$Sj \quad = 1 \text{ if subject combination (j)}$$
$$= 0 \text{ otherwise.}$$

Similarly, dummy variables were constructed for each year represented in the sample, namely,

$$Yj \quad = 1 \text{ if Year 12 undertaken in year (j)}$$
$$= 0 \text{ otherwise.}$$

As the subject combination dummy variables and time dummy variables each form a linearly dependent set it is necessary to drop one subject combination dummy variable and one time period dummy variable in estimation.

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[1] The results reported 'at age 21' represent a considerably reduced sample size because two years of data on students who had not yet reached 21 years of age in 1997 have been excluded.

A number of regressions were run with the following subject combinations used sequentially as a 'control' group:

- 'maths, advanced maths, physics and chemistry'
- 'maths, biology, history, geography, art, LOTE',
- 'art, art other, graphics, music, media studies'.

Regression results are discussed in relation to these subject groupings.

The 'year' dummy variables (with 1990 as the 'control' time period) were significant throughout the regressions. This suggests that the year in which a student applied for entry to VET affected the chance of a student gaining entry. This effect can be explained by the demographic changes that occurred over the five years of the sample period. There was a 9 per cent decline in the number of people aged 15 to 19 years between 1990 and 1994. It would be more difficult for a student aged 15 to 19 years in 1990 to gain entry to VET compared with the situation facing the equivalent age cohort five years later, other things being equal.

CURRICULUM CHOICE AND POST-SCHOOL EDUCATION AND TRAINING

The post-school education and training outcomes of students at age 19 according to their senior secondary subject choices are presented in table 1. The table provides details on the percentage of students in each subject grouping who have entered higher education, vocational education and training (apprenticeship, traineeship or other TAFE course), other education or have pursued no further education. By age 19 some students will have participated in both VET and higher education.

There are clear differences in post-secondary education and training outcomes depending upon curriculum subject choices in senior secondary school. Over two-thirds of the sample undertaking 'physical education' and 'technical drawing, technology, general maths and computing' subject groupings did not undertake further education in the year after they completed year 12.

By age 19, over half of the young people who had undertaken these subject groupings still had no further education experiences, although the percentage in the 'physical education' subject group with no further education had reduced to 46 per cent by age 21. These results are gender related because males are strongly over-represented in the 'technical drawing, technology, general maths and computing' subject grouping.

CURRICULUM CHOICE AND VOCATIONAL PATHWAYS

A high proportion of students who have taken subject combinations in senior secondary school from the 'vocational education and technology' and 'health sciences and physical education' curriculum groupings, with the exception of 'physical education' subject combinations, enter vocational education and training courses in the year after completing year 12. Other subject combinations where more than a quarter of students have entered vocational education and training in the year after completing year 12 are 'art, art other, graphics, music and media studies', 'history, geography, general maths, humanities other and art', and 'general maths, biology, history, geography, health and art'.

By age 19, over a quarter of students have entered post-secondary vocational education and training courses from all curriculum groups with the exception of 'business studies', 'business studies and sciences', 'sciences and maths and 'sciences and humanities', that include maths taken at a higher level than general maths.

There are clear differences, across the senior secondary curriculum groupings, in the percentage of students who have taken up an apprenticeship, a traineeship or have entered another TAFE course.

Apprenticeship

With the exception of subject combinations that include typing and secretarial studies, between 13 and 16 per cent of students who studied a 'vocational education and technology' curriculum in senior secondary school entered an apprenticeship the year after completing year 12.

By age 19, about a quarter of those who studied the subject combination 'technical drawing, technology, general maths and computing 'had entered an apprenticeship. and one in five students who took the subject combination 'agriculture, craft, technology, general maths, health and general science' were in an apprenticeship.

Traineeship

Notably, 11 per cent of the subject combination 'health, general maths, general science, biology and home economics' had entered a traineeship in the year after completing year 12. The percentage entering a traineeship in the year after finishing secondary school that completed other subject combinations was considerably lower. However, by age 19 the percentage of those who entered a traineeship and undertook the subject combinations 'business studies, legal studies, textiles, general maths and biology', 'agriculture, craft, technology, general maths, health and general science', and "typing, secretarial studies, general maths, home economics and applied computing' had increased to more than 9 per cent.

Other TAFE courses

With the exception of the 'sciences and maths' curriculum group and 'physical education', 'technical drawing, technology, general maths and computing' and 'maths, biology history, geography, art and LOTE' subject combinations, at least 10 per cent of students from all areas of the curriculum had entered a TAFE course, other than as an apprentice or trainee the year after completing year 12.

By age 19 about one in five students from 'arts and humanities' and the subject combination 'general maths, biology, history, geography, health and art' had entered a TAFE course. The percentage of each subject grouping entering a TAFE course by age 21 had increased considerably over those undertaking a TAFE course to age 19.

ENTRY TO POST-SCHOOL VOCATIONAL EDUCATION AND TRAINING

The distribution of students who have entered post-secondary vocational education and training by age 19 according to senior secondary subject grouping is presented in table 2. There are clear differences across subject groupings in the percentage of students undertaking an apprenticeship, a traineeship or other TAFE course according to the group of subjects taken in year 12.

Statistical analysis indicates that the curriculum undertaken in senior secondary school does make a significant difference in terms of the likelihood of entering different areas of vocational education and training to age 19.

Compared with the subject combination 'maths, biology, history, geography, art and LOTE', the likelihood of entering vocational education and training is significantly greater for youth who have undertaken subject combinations from the curriculum groupings 'vocational education and technology', 'health sciences and physical education', with the exception of physical education, and 'arts and humanities' with the exception of 'French, German, music, literature, history and geography'. The likelihood of entering vocational education and training is also significantly greater with the subject combinations 'general maths, biology, history, geography, health and art' and 'business studies, legal studies, textiles, general maths and biology'.

Compared with the subject combination 'art, art other, graphics, music, and media studies' the likelihood of entering vocational education and training is significantly lower for youth who have undertaken subject combinations from the curriculum groupings 'sciences and maths' and 'business studies and sciences' and the subject combination 'maths, biology, history, geography, art and LOTE'. Students from these curriculum areas tend to enter higher education rather than VET. There is no significant difference in the likelihood of students from these subject groupings entering VET.

Apprenticeship

At age 19, 11 per cent of students who had undertaken an apprenticeship, and had completed year 12, were from the 'technical drawing, technology, general maths, computing' subject grouping. A further 9 per cent of students were from each of the 'maths and physical sciences', the 'agriculture craft, technology, general maths, health, general science' and the 'maths, industrial arts, industrial technology, technical drawing' subject groupings (see table 2). Notably, very few students who studied the 'French, German, music, literature, history, geography' group of subjects were in an apprenticeship.

Statistical analysis suggests those students taking courses in senior secondary school from the 'vocational education and technology' curriculum areas have a greater likelihood of entering an apprenticeship by age 19. The exception is a subject combination including typing and secretarial studies. Almost a third of students who had undertaken an apprenticeship were from the vocational education and technology curriculum grouping.

The likelihood of entering an apprenticeship with a 'business studies and sciences' and 'French, German, music, literature, history and geography' subject combination is significantly less than a combination of subjects with 'art, art other, graphics, music and media studies'.

Traineeship

By age 19, over 12 per cent of trainees who had completed year 12 had studied the 'general maths biology, history, geography, health, art' subject grouping in senior secondary school. A further 10 per cent had studied 'health, general maths, general science, biology, home economics' subjects (see table 2).

Statistical analysis indicates that there is a significantly greater likelihood of entering a traineeship by age 19 with the subject combinations of 'maths, industrial arts, industrial technology and technical drawing', 'health, general maths, general science, biology and home economics' and 'agriculture, craft, technology, general maths, general science, biology and home economics' than other subject combinations.

The subject combination of 'business studies, legal studies, textiles, general maths and biology' offers a greater likelihood of entry to a traineeship than 'maths and physical sciences' or 'maths, biology, history, geography, art and LOTE'.

Other TAFE courses

By age 19, over 15 per cent of all students undertaking other TAFE courses (not apprenticeships or traineeships), and who had completed year 12, had studied the 'general maths biology, history, geography, health, art' subject grouping in senior secondary school.

In terms of entry to a TAFE course by age 19 other than as an apprentice or a trainee, there is a significantly greater likelihood of entry with the combination of subjects 'art, art other, graphics, music and media studies', 'general maths, biology, history, geography, health, art' and 'health, general maths, general science, biology and home economics'. There is a significantly reduced chance of entry from the 'sciences and maths' curriculum group and with the 'maths, biology, history, geography, art and LOTE' combination of subjects. These subject groupings however, lead onto higher education. There is also a significantly reduced likelihood of entering TAFE with the 'physical education' subject combination.

Conclusions

The results of this study suggest that there are important differences in post-secondary education outcomes depending upon the group of subjects taken in senior secondary school.

- Some parts of the senior secondary curriculum do not provide the opportunity for further education that is provided by other areas of the curriculum.
- These results are of concern as there are gender patterns associated with those areas of the curriculum that offer limited opportunities for further education.
- Some subject combinations clearly offer poor outcomes for participants in terms of opportunities for undertaking post secondary education.
- Some parts of the curriculum provide a greater likelihood of entry to an apprenticeship, a traineeship or other TAFE course.
- Not all students who study vocational subjects in senior secondary school undertake an apprenticeship after completing school. By age 19, two-thirds of students who undertook vocational subject groupings had not been in an apprenticeship.
- Many young people who undertake an apprenticeship have not studied vocational subjects in senior secondary school.
- Young people entering traineeships or pursuing other TAFE courses have studied a wide range of subject groupings in senior secondary school, although a high proportion of students have a sciences and humanities background.

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TABLE 1: CURRICULUM GROUP, BY POST-SECONDARY EDUCATION, TO AGE 19 (PER CENT)

Curriculum group	Higher education	Vocational education			Other education	No further education
		Apprentice	Trainee	Other TAFE		
ARTS AND HUMANITIES						
French, German, Music, Literature, History, Geography	38.71	1.08	6.45	19.35	5.38	34.41
Art, Art Other, Graphics, Music, Media Studies	17.14	7.14	3.57	20.71	13.57	41.43
History, Geography, General Maths, Humanities Other, Art	23.85	3.67	5.50	20.18	15.60	35.78
BUSINESS STUDIES						
Maths, Economics, Accounting, Computing	60.48	4.79	2.40	16.77	4.19	17.37
Economics, Accounting, Legal Studies, Textiles, General Maths, Biology, Computing	42.86	3.06	3.06	16.33	9.18	27.55
BUSINESS STUDIES AND HUMANITIES						
Maths, Economics, Geography, History, Art	43.75	2.08	7.29	16.67	12.50	25.00
Business Studies, Legal Studies, Textiles, General Maths, Biology	19.01	5.63	9.15	13.38	8.45	46.48
BUSINESS STUDIES AND SCIENCES						
Maths, Economics, Chemistry, Biology, Computing	59.57	2.13	5.67	12.77	4.96	17.02
SCIENCES AND MATHS						
Maths, Advanced maths, Physics and Chemistry	76.83	4.28	2.52	8.56	2.02	9.82
Maths, Chemistry, Biology, Other Science, Computing	63.19	5.49	3.85	10.99	4.40	15.93
SCIENCES AND HUMANITIES						
Maths, Chemistry, Literature, Music, French, History, Art.	50.47	3.74	5.61	14.95	2.80	24.30
General Maths, Biology, History, Geography, Health, Art	17.61	3.99	6.98	23.26	10.96	41.20
Maths, Biology, History, Geography, Art, LOTE	46.84	4.22	3.38	11.81	7.59	30.80
HEALTH SCIENCES AND PHYSICAL EDUCATION						
Physical Education	16.19	6.67	7.62	11.43	9.52	55.24
Maths, Biology, Physical Education, Health, Home Economics, Legal Studies	31.17	8.44	5.19	16.23	10.39	31.82
Health, General Maths, General Science, Biology, Home Economics	13.85	8.46	12.31	27.69	12.31	34.62
VOCATIONAL EDUCATION AND TECHNOLOGY						
Technical Drawing, Technology, General Maths, Computing	3.61	25.30	4.82	14.46	8.43	51.81
Agriculture, Craft, Technology, General Maths, Health, General Science	7.32	20.73	12.20	12.20	4.88	43.9
Typing, Secretarial Studies, General Maths, Home Economics, Applied Computing	7.84	8.82	10.78	17.65	12.75	46.08
Maths, Industrial Arts, Industrial Technology, Technical Drawing	17.58	17.58	8.79	17.58	7.69	37.36

SOURCE: Tabulations from *Australian Youth Survey* based on the 1990-1994 16 year-old samples and follow-up surveys (unweighted N=6,052; weighted N=1,189,846).

TABLE 2: POST-SECONDARY EDUCATION, BY CURRICULUM GROUPING, AT AGE 19 (PER CENT)

Curriculum group	Higher Education	Vocational education			Other education	No further education
		Apprentice	Trainee	Other TAFE		
ARTS AND HUMANITIES						
French, German, Music, Literature, History, Geography	3.17	0.54	3.55	3.89	2.16	3.55
Art, Art Other, Graphics, Music, Media Studies	2.11	5.38	2.96	6.26	8.23	6.43
History, Geography, General Maths, Humanities Other, Art	2.29	2.15	3.55	4.75	7.36	4.32
BUSINESS STUDIES						
Maths, Economics, Accounting, Computing	8.89	4.30	2.37	6.05	3.03	3.22
Economics, Accounting, Legal Studies, Textiles, General Maths, Biology, Computing	3.70	1.61	1.78	3.46	3.90	2.99
BUSINESS STUDIES AND HUMANITIES						
Maths, Economics, Geography, History, Art	3.70	1.08	4.14	3.46	5.19	2.66
Business Studies, Legal Studies, Textiles, General Maths, Biology	2.38	4.30	7.69	4.10	5.19	7.32
BUSINESS STUDIES AND SCIENCES						
Maths, Economics, Chemistry, Biology, Computing	7.39	1.61	4.73	3.89	3.03	2.66
SCIENCES AND MATHS						
Maths and Physical Sciences	26.85	9.14	5.92	7.34	3.46	4.32
Maths, Chemistry, Biology, Other Science, Computing	10.12	5.38	4.14	4.32	3.46	3.22
SCIENCES AND HUMANITIES						
Maths, Chemistry, Literature, Music, French, History, Art.	4.75	2.15	3.55	3.46	1.30	2.88
General Maths, Biology, History, Geography, Health, Art	4.67	6.45	12.43	15.12	14.29	13.75
Maths, Biology, History, Geography, Art, LOTE	9.77	5.38	4.73	6.05	7.79	8.09
HEALTH SCIENCES AND PHYSICAL EDUCATION						
Physical Education	1.50	3.76	4.73	2.59	4.33	6.43
Maths, Biology, Physical Education, Health, Home Economics, Legal Studies	4.23	6.99	4.73	5.40	6.93	5.43
Health, General Maths, General Science, Biology, Home Economics	1.58	5.91	9.47	7.78	6.93	4.99
VOCATIONAL EDUCATION AND TECHNOLOGY						
Technical Drawing, Technology, General Maths, Computing	0.26	11.29	2.37	2.59	3.03	4.77
Agriculture, Craft, Technology, General Maths, Health, General Science	0.53	9.14	5.92	2.16	1.73	3.99
Typing, Secretarial Studies, General Maths, Home Economics, Applied Computing	0.70	4.84	6.51	3.89	5.63	5.21
Maths, Industrial Arts, Industrial Technology, Technical Drawing	1.41	8.60	4.73	3.46	3.03	3.77

THE MEASUREMENT OF LEARNING CONVERSATIONS: THE ILLUSION OF THE ABSOLUTE, OBSCURES MEANING

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ABSTRACT

This paper examines the forces upon and concerns of VET researchers when attempting to frame research to develop our understanding of current learning environments. The concern of the paper is that VET researchers often find their activity is shaped and framed by institutional pressures for outcomes which restrict the opportunity to display the complexity of the learning environment and the often paradoxical narratives.

Three recent research projects are critically reviewed from this perspective to highlight these concerns. The conclusion indicates some of the more critical questions researchers should be asking to ensure the framing process includes and is shaped by learner perceptions.

Introduction

> I called it Karioke because it is like our lives are already made for us. (Dennis Potter, 1996)

To what extent is our research path already mapped out for us? To what extent does it exclude the opportunity for learners to shape the process? The conference provides us with an opportunity to step back and examine our practice and specifically targets the issues of quality and diversity. Who determines the quality of our research and what criteria should we use to make such measurements? What is excluded from our current focus and perceptions?

This paper will argue that while we must take responsibility for the quality of our research we often find it is shaped by institutional pressures rather than the stories of learning. The *measurements* that we make are often pre-framed (Dunbar, Garud and Raghuram, 1996) from the paradigm of learning as acquisition, rather than learning as new meaning developed though conversations. We may fall victim as researchers to the *social traps* that exclude diversity, and which Barry and Bateman (1996) suggest, encourage other managers to ultimately select excluding options.

> . . . we adopt seemingly beneficial behaviours that may have negative consequences over time or for a larger collective.

The quality of our research is therefore driven by institutional perceptions to create authorised knowledge, of which we are often prisoners. The criteria by which quality is judged often excludes the role of learners in determining how effectively their experiences have been displayed and in legitimising the knowledge created (Seddon, 1997).

On the issue of diversity the argument in this paper is that the focus on distributable results and outcomes often clouds perhaps more valuable perceptions about the nature of changes and process in the learning environment. The pursuit of absolute meanings that may satisfy some more powerful stakeholders, can actually obscure meaning which lies within learners' narratives. Such stakeholder perceptions dominate the workplace knowledge creation (Stevenson, 1998; Matusik and Hill, 1998) and the subsequent framing of research.

Dennis Potter suggests that perhaps our lives are already mapped out for us. Not a charted course, but the chaotic ride of sailing in an ocean where our direction governed by forces more powerful than those at our disposal. The journey is in fact predetermined, and like many of his characters, all we do is sing the same songs, maybe in our own voice, or maybe in mime to those who have done it better before. If our lives are thus pre-framed, how difficult it is for us to see and display life as others experience it, rather than as others would like it to be seen.

If we accept that learning environments are both seamless and multiple in their location, and intrinsically fluid in their nature, then they must present us with intractable dilemmas. It is unlikely that hidden within the complexity will be a core of learning truths waiting to be discovered. The argument here is that decisions concerning research measurement are particularly complex when learning environments are viewed as a continual series of conversations which provide an almost infinite number of perspectives through the mix of individuals, their interaction, the variety of locations and the passage of time. The early construction of more positivist frames would therefore seem incompatible and counterproductive (Garrick and Kirkpatrick, 1998). However our research environment contains powerful institutional voices that exert legitimate, referent, expert and coercive pressures upon our research activities through their texts (Foucault, 1977).

The paper suggests that there are some specific factors that pressure researchers to move towards a more positivist approach which may restrict the extent to which the rich picture of the learning environment is captured within the data. First, research frameworks are often formed well in advance of research activity due to the institutional pressures of funding applications and visible accountability (Seddon, 1997). Second, research proposals in an attempt to be specific about methodology and purpose, often err towards the quantifiable and louder, more accessible, voices. Third the audience for project outcomes drives the agenda often to the expense of the process.

Of course it is others who fall prey to such traps. This paper will critically review recent personal experiences of VET research and explore with scepticism the early construction of research frames and their implications. There needs to be particular concern about the validity of data where the framing of the research has been more constructed by institutional pressures rather than shaped by learner events. The conclusion suggests that given these influences, the generalisability of VET research findings should perhaps carry a government health warning for relevance in an increasingly fluid environment. Perhaps a greater focus upon an interpretive framework for research conclusions may be beneficial.

The Nature of Learning Environments

> Learning goes way beyond training, embracing structural adjustment, the use of experimentation, the development of new language and the reshaping of values . . . Knowledge then has to be codified and diffused within the organisation and entrenched knowledge and beliefs broken down... the relation between such learning and strategy formation and implementation is reciprocal. (Whipp, 1992, p.51)

The complexity of learning environments presents researchers with a dilemma. Learning experiences are both part of much wider organisational development frames and are also part of each individual's lifeworld. It is difficult to focus adequately on both. We are well aware of how complex and difficult to understand our own learning journeys are. The complexity that exists when many people are grouped and interacting in an organisation presents even greater challenges. The shared agreement of new knowledge is inevitably about competing interests and power. As Cooper and Law (1995) express it, knowledge and power inhabit each other.

In the play Karioke we are presented with many layers of reality. The play is written by a dying playwright who tells the story of a dying playwright making a play where the actors step from his videoed scenes into a strangely similar reality, where their real life echoes the script. At the same time we see the conceptual basis for the next play created. In the complexity of learning environments we are faced with the same layer upon layer. There are organisational structures and interfaces where culture meets culture, and personal interaction where new meaning may be negotiated. We attempt to deal with the most complex process of development at both the individual level and at the organisational level, recognising the differences that exist (Childs and Wagner, 1998). We attempt to create new knowledge about others creating knowledge. As in Karioke, it becomes difficult to determine what is real and what is a reflection or pastiche. Harvey (1989) suggests that the discontinuity of our learning environments should discourage us from pursuing any relationships other then evolving processes.

> This of course, is the kind of environment in which deconstruction can flourish. If it is impossible to say anything of solidarity and permanence in the midst of this ephemeral and fragmented world, then why not join in the language game. (p.291)

The dilemma is that VET researchers are often already themselves framed as deductive reasoners, who will establish truth, rather than those who search for instabilities (Lyotard, 1984). How often do the research goals that frame research activity recognise that exploring competing discourses, and recognising the continual shifting of differences as a process, are legitimate outcomes? There appear to be pressures which encourage researchers to frame their research from the privileged national perspective and explore the differing perceptions and preferences from within this frame. The goal of a singular knowledge and a controllable text seems to take precedence over research representations of a continually developing and changing knowledge about the learning environment (Legge, 1995). This is however not easily learned for those of the modern era as Harvey (1989, p.49) has suggested.

> The fragmentation, the pluralism and the authenticity of other voices and other worlds poses the acute problem of communication and the means of exercising power through command thereof.

To what extent is our research funded to legitimise change process or to inform change processes (McIntyre, 1998)? It seems that often it is based upon a functionalist perspective where the assumption is that the social structure of the learning environment is tangible, constructed and controllable (Harper, 1998), and where the focus is upon adapting relationships between people. Managing the learning culture. Perhaps we are locked into a traditional, comfortable, legitimised frame. How often do we feel institutional pressures to conceptualise and frame the research from one of the other three paradigms that Morgan (1995 and 1996) proposes? The interpretive perspective, based upon the assumption that the social world is a product of how individual groups interpret the world, and how such multiple realities interact within the learning network. The radical humanist perspective, which is based on the assumption that we construct organisations based upon the forces have deeply shaped our psychic development and that our unconscious is released in our organisational behaviours and learning motivation. The radical structuralist perspective, based on the assumption that organisations are a socially created reality, but that they are the product of the tensions and power that exists between social groups. Shared meaning is actually impossible and is replaced by a deferral of difference where individuals and group are persuaded to replace identity with organisation. From this perspective organisations are instruments of domination, seduction or catastrophe and their learning mechanisms reflect the same cultural tensions. No easy answers here.

The functionalist perspective that is concerned with problem solving and the enhancement of order, is the image that we have been sold by government and organisations and shapes and pre-frames much research. The more interpretive perspective pushes us to understand the process of that order by recognising the excluded narratives of symbolic relationships and questioning the myths which support the quest for certainty. The more radical perspectives draw organisations as suppressing, political and exploitative, and encourages us to realise that supposed order of the learning environments which we view is often superficial and just masks the underlying contradiction and personality dysfunctions. From these perspectives we may uncover the barriers that exist in the all too real enacted world or gain understanding of systems in crisis. The only logic we see in organisational learning frameworks is perhaps what we want to see by ignoring the discursive complex that exists between the cultures within that learning environment and organisation. It could be suggested that the order portrayed in government texts does not exist in the complex reality of the training world but that it is researchers who retrospectively draw the pieces and stories together? Linstead (1996) suggest that such evolving organisational cultures are the result of an interweaving of texts from subgroups within organisations, where symbolic action leads to the negotiation and construction of new meaning. Should our research frame focus on learners, or is it always incomplete without the wider context of organisational knowledge and power?

If we recognise learning environments as both seamless and multiple in their location, and intrinsically fluid in their nature perhaps the framing of our research should mirror that reality (Legge, 1995). The early construction of more positivist frames, shaped in the main by tradition and more functionalist institutional perspectives would therefore seem less compatible.

The Research Environment

The initial argument has been that there are pressures which frame research activity that may inhibit the inclusion of the richness, complexity, diversity and continuous nature of learning conversations. This section focuses upon three specific implications of such pressures ; the early framing of research proposals ; the detailed specification of methodology and data sites ; and the anticipated project outcomes. How may the pressures of a positivist and functionalist perspective shape research activity.

First, research frameworks are often formed well in advance of research activity. There is a requirement for funding applications and institutional support for visible accountability, even before preliminary investigation of the learning environment has taken place. It is at this point decisions are often made about what will be included within the project, and yet such inputs often exclude what might have been valuable learner contribution. The project is to some extent pre-framed, with the contribution of reference groups bringing expert power to shape the approach to the learning environment. In an environment where the need for continual learning is often interpreted as a need for continued credentialism, it is likely a more positivist framing will emerge. The focus on product rather than process is often set by the time line. In the mind of the researcher control of the data sites perhaps becomes more important than the discontinuity within them. The focus on learning may exclude the wider frame of the organisation or the inner frame of the participants' lifeworlds.

Pilot activity may be used to involve learners, but is likely to be researcher led rather than learners led, dominated by the need to test rather than explore. In many ways it is the clear division between pilot and data collection which often exist, that can deny the symbiotic relationship in most research between the two processes. Researchers start as the learners. This personal learning slowly diminishes as the complex data from the learning environment is gathered, each process reciprocally feeding the other.

Second, research proposals in an attempt to be specific about methodology and purpose, often err towards the quantifiable and louder more accessible voices.

Academic traditions of measurement appear to give legitimacy to statistical evidence where weight equates with truth. The experience of critical corridor conversations is more difficult to justify. Story telling often lacks legitimacy in comparison with the allure of tested instruments. Such instruments may curtail learner responses and determine what is defined as the location of the learning experience. The value of learner researcher conversations is less evident.

In addition there is the dilemma about the early framing of research goals and questions, the deductive or inductive approaches. Where the researcher defines a pure research target and then searches for suitable sites, they may often be more self selecting than we would care to admit. The limitations of site access restrict the boundaries of the research and degrade the research data available. Conversely, taking advantage of available and rich data sources may enable the learning environment to frame relevant research questions. Which course of action is more likely to represent the complexity and changing nature of interactivity in learning environments, and enable learners to shape the project?

Third, the audience for project outcomes and positive outcomes drives the agenda often to the expense of the process. The researcher becomes manager and takes on the responsibilities and discourse of that interactivity. The need to manage and control the project and outcomes may be displaced to the data analysis. The fears of insufficient data are replaced usually quiet swiftly by data overload ; the fears of a lack of patterns, by euphoria about emerging trends. The desire for consumable product may outweigh the desire for narrative integrity.

The need to represent one's self in research papers, conferences and the cumulative statistics of Higher Education may be greater then the need to represent the complexity of the learning environment studied. As Billett (1998) has indicated, it is best to view research outcomes that fall into neat categories with some scepticism, if your experience involves you in complex and paradoxical narratives that are never so obviously discernible.

Deconstructing Personal Experience

To what extent and how, do we bend with the pressures upon us? How do more powerful perspectives shape our research activity, and to what extend do such changes work to exclude learner voices? While I know my own research has been constructed with sometimes sleepless integrity, I must recognise that, just as no review is independent, these research projects were framed by specific pressures. I have chosen to examine three recent projects in the light of the previous argument? What evidence is there of the influence of more functionalist and positivist approaches that may have excluded the examination of process, in pursuit of a pre framed product?

The first project involved following over a hundred VET learners over a six month period and determining how the experiences they had influenced their development of learning skill. The results indicated a significant linkage to experiences where participants were responsible for the preparation and presentation of learning evidence.

I began with a clear objective, and nothing got in the way. The project was driven by a need for academic outcomes within a defined time period. While recognising the complexity of the learning environment, the project sought to exclude organisational issues by focussing on issues of individual competence. The pilot activity was used to refine pre-determined approaches, and pre-tested instruments were used within available but limited sites. The quantitative approach was accidentally enhanced by serendipitous corridor conversations which provided the most fortuitous illustrative material. The research structure may well have excluded the process of developing knowledge's which were not anticipated by the instruments. Critical influences of the work and learning relationship was uncovered, but did not fit the pre-framed objectives which were constructed to simplify the process of workbased learning (Childs and Wagner, 1998). While I cared enough to give seminar feedback to every site and written research conclusion to each participant, they remained patronisingly my subjects. Marks out of ten - five.

The second project involved reviewing over the past decade the implications of CBT for an industrial company. The results indicated a close relationship between quality standards and training. The quality drive had systematised the approach to training. However the systematic approaches had led to a rigidity in process and management, which were ironically, a barrier to the flexibility that the company now required. The project recognised the importance of organisational culture as the participants constructed the past decade. The use of a series of in depth vertical interviews built a broad picture of the organisational changes. By definition, the project focussed on longer serving employees, management selected and excluded those who had left the culture perhaps with different interpretations of the meaning of events. The project excluded external providers and the influence that their definition of products and marketing influence may have had on the process of development. Each interview informed the structure of the subsequent interview. The open approach enabled the participants to lead the process. Time pressures for outcomes prevented an adequate review of the final draft by the participants. Marks out of ten - 8

The third project involved examining what training managers wanted from the training they purchased and how they expected workplace activity to change as a result. The results indicated a clear connection between those who looked for learning ability development and the subsequent adaptation of work processes and organisational learning. This project responded to a tight time line and suffered from a very limited critical review process. However a more open format of interviews enabled participants to interpret issues in individual ways and give feedback on the interview transcripts. The process of analysis, which involved the initial construction of case studies, was shaped by the difference which appeared between the cases. While the single data sources prohibited triangulation, they were still able to indicate a wide difference in learning relationships, from reflective communities to those where purchasing training had dislocated learning relationships (Childs and Wagner, 1998). The restriction to a single data collection limited the projects ability to reflect changes in perception. Marks out of ten - seven

Conclusion

The concern expressed here is that while we are examining how learning is constructed and learners construct, we too are constructed and often coerced to offer a more unified reconstruction. In accepting the perceptions of powerful influences, we lessen the ability of the participants to frame the research outcomes. We too are constructed (Jonassen, 1991). The principle of endogenous construction may suggest that as researchers we are constructed by our past experiences and knowledge so that traditional patterns of pre framing are hard to resist. The principle of exogenous constructivism may indicate that our projects are constructed to meet our perceptions of the expectation we see in our institutions and peer groups. Finally the principle of dialecticism may suggest that the group with whom we most discuss our current learning dilemmas will have the greatest influence upon the research project construction. In many cases, these influences that construct our learning are less likely to be VET participants and our ability to develop a shared meaning about the learning environment diminishes.

Managerialism seeks to construct. Rees and Rodley (1995) suggest that Higher and Tertiary education and training institution have been subject to similar growths in managerialism in the pursuit of more, with less. This preoccupation with control, that we have all the answers, and are not constantly seeking them, is a strong and dysfunctional influence for research activity emanating from such institutions (Rhodes, 1996). It is likely to not just dislocate learners from their facilitators, but also researchers from narratives. The managerial rhetoric of participation within a discourse of compliance, can lead to a corresponding research rhetoric of contribution within a discourse of exclusion and compartmentalisation. The distance between the rhetoric and reality in competence based approaches has often been rather like the Kings Clothes (Barratt-Pugh, 1995)). The suggestion is that we need to make a personal investment in resisting early framing of research projects so that we may be able to reap the latter dividend of greater participant contribution in shaping the research frame. A more fluid approach to the research frame would better mirror the complexity and difference of the learning environment.

While much research will still be shaped by prior grant applications, both peer review, and peer and practitioner acceptance, defines the effectiveness of much research. It is therefore, for each researcher to question any framework that does not enable and include multiple learner voices in our tentative constructions of what is a complex environment Cope and Kalantzis, 1997. Without a broader framing we risk being the tail that wags the dog, as we misrepresent their realities.

Participant data should shape and not just inform the research frame. Where we become subject to a managerial approach to research, with goals of more for less, there may be pressures to exclude the costs in human terms. Learning construction should be part of a wider life and seen as part of a wider culture, not a quality assurance pursuit. Currently training markets create consumers and strangers rather than learning relationships and dislocate knowing from doing and reflecting from doing (Mulcahy and James, 1998). They often exclude situated knowledges. It may be that more ethnographic enquiry methods may be applicable to represent the reality of such subcultures and validate the outcomes.

Research results should perhaps reflect the discontinuous and multiple nature of the learning environment and pay more regard to the complex political action taking place at the organisational level which frames such events. Perhaps outcomes should state more clearly the particular characteristics of the research sites and like Hofstedes' (1994) dimensions of culture, clarify the wider framing forces in the project sites.

Perhaps we should judge the quality of our research not on our ability to tell their story or even stories, but on our ability to let *their* stories be told through the data. This often means resisting pressures to frame the research early and resist the pressures to exclude the diversity of learning experiences. It appears that in an environment of discontinuous change, the heart of the learning culture lies at the point of greatest difference.

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WOMEN, BUSINESS AND VET: FURTHERING A DIVERSE RESEARCH AGENDA

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ABSTRACT

Research into women business operators has greatly expanded since the 1970s, in recognition of the perceived growth and economic potential of this segment of the local, national and international economy. Prompted by this development research into training women as business owners has also received a boost. Yet several of the policy "solutions" derived from this research have received at best limited success from a "user" perspective.

The problem stems partly from not recognising the dual diversity of users of this research and the research population itself, especially some common differences between women business owners and their male counterparts. Drawing on a recent study by the author and a follow-up literature review by Butler, Kempnich and Billett, this paper examines the implied identity of "users" of research into women's business ownership and related training. It also examines implicit political agendas embodied in that research, and identifies models of business women's experience which do not always match the realities of business women themselves.

These partialities and discrepancies in the worldview of researchers, and research users, as much as the notorious elusiveness and diversity of the target research population, have constrained both the broad research agenda and specific research techniques for VET for women business operators. Greater use of qualitative techniques is suggested. The paper also sets out how some *combinations* of research techniques may better recognise the diversity of users of research into women's business ownership training, their perspectives, and their goals.

Introduction

WOMEN, FIRMS AND VET – A CASE OF CLASSIFICATION ERROR?

A famous problem of classification in linguistic theory relates to the noun classes of the Aboriginal language Djirbal. Djirbal has four noun classes. The first, *Masculine*, includes men and virtually all animals. The second is called *Women, fire and dangerous things.* It includes women; fire, the sun, and related nouns like sunburn; dangerous things such as some stinging trees, spears, bodies of water (but not rain), which are the homes of dangerous spirits. It also includes the animals not in the first group. They are specifically animals that are easy to catch and which young people are forbidden to catch and must leave for old people. The third noun class is *Vegetable*, and contains all names of vegetable material that people can eat. The fourth, or *Neuter*, includes everything else.

While the existence of the four classes is undisputed - they are clearly distinguishable in the surface grammatical features of Dyirbal - the *basis* of them has led to fierce debate. This is especially true for the second noun class, *Women, fire and dangerous things.* One of the original theorists of Dyirbal was Lakoff, who actually named the book which made his career after the second noun category of Dyirbal: *Women, fire and dangerous things.* The book title has attained icon status in linguistic circles and Lakoff's arguments on noun classification are regarded as received wisdom in first year linguistics classes. Lakoff's belief is that Dyirbal echoes a universal, primary and somehow "natural" separation between masculine and feminine, and he points to the existence of masculine and feminine noun groups in several European languages. Other theorists have criticised Lakoff's approach for not dealing adequately with the remaining two Dyirbal noun classes *Vegetable* and *Neuter*, and with the relationships between the other elements within the second class of Dyirbal nouns, fire and dangerous things. Lakoff's Eurocentric views, it is said, are a case of classification error. They overlook the worldview of the Dyirbal people - and indeed it is not difficult to see how the language and its noun classes, considered as a system of four and not two, reflect the lifestyle and survival priorities for Dyirbal people.

Why this excursion into what might seem the arcane realms of linguistic theory? The reason is that linguistic discussions of research into "women, fire and dangerous things", are rather like current discussions of the research into "women, firms and VET". Women, firms and VET also seem to be suffering from various forms of classification error. Specifically, women-owned firms and VET are increasingly seen as being linked together, and indeed they are. But the complexity of the links between women, firms and VET has too often been overlooked. Moreover, the ways women who own firms and their VET needs differ from, say, the VET needs of men who own firms, are also inadequately appreciated. This paper argues that VET policy - which is created by the only some of users of VET research - has suffered from a research agenda which has not sufficiently noted and appreciated the differences within the category "women business owners", and between this group and their male counterparts.

The paper does this in the following way. First, it examines some of the salient details about what we know about women business owners and their firms, and how they differ from men and male-owned firms. Then, it examines current VET policy and the ways the goals of the implied "user" of the research often exemplify a worldview which does not match the diversity of the groups whose needs the research purports to meet. Finally, we posit changes in priorities in research approaches that are suggested by these mismatches and gaps.

RESEARCH METHOD

The research from which these conclusions and recommendations has been derived from:

1. a qualitative (structured interview) study of 78 women business owners. The business owners included women from a wide variety of industries and with varied experience of the VET system. For more detail about this, see Barrett (1997).

2. a comprehensive literature review of women business owners and related VET policy. (See Butler, Kempnich and Billett (forthcoming, 1999).) There have been a number of reviews carried out recently into women and small business and women and training. The most notable recent publication is *Women in Small Business: A Review of Research* by Roffey et al (1996). Gibb (1997) conducted another stand-alone report for the NCVER. Many research reports also contain substantial reviews of the literature, including ANTA (1997), Bureau of Industry Economics (1991); Coopers and Lybrand (1995); Revesz and Lattimore (1997); SA Women's Advisory Council (1996); Wolcott (1996) and Yellow Pages Australia (1996). The literature review on which the Butler, Kempnich and Billett is paper is based paid particular attention to analyses which challenge or deviate from the "received wisdom" about women in small business and about VET.

Characteristics of women business owners and their firms

SMALL BUSINESS AND WOMEN'S PARTICIPATION

It is commonly noted that women are an increasing presence in small business. Small business is itself the major source of private sector employment. According to the ABS report *Small Business in Australia* (ABS 1995), just over half of all private sector employment is provided by small businesses and these in turn account for around 97 percent of al private sector businesses. When agricultural businesses are excluded from the figures, small business still accounts for 90 percent of all businesses, and provides 49 percent of private sector employment.

It is regularly noted following Wolcott (1996) that women are establishing small businesses at three or four times the rate of men. This trend is especially marked in the areas of self-employment and home employment. ABS estimates place between 33 percent and 34 percent of all small business operators as women, and a much larger proportion of businesses are cited as having women as major decision-makers.

THE SIZE OF WOMEN-OWNED FIRMS

It is known that women-owned firms are smaller than those of men. Women-operated businesses occur more frequently in non-employing businesses than other sized businesses, with 16 percent of non-employers being predominantly women-operated. This compares with only 5 percent of businesses with 1-4 employees and 4 percent of businesses with 5-19 employees. Roffey et al (1996) point out that "between 1989-90 and 1993-94, all of the increase in females working in their own business has been in those businesses without any employees." Australian Bureau of Statistics data (ABS 1996, pp 10-18) indicates that a higher proportion of predominantly female-owned businesses have static income and static employment levels than either male owned businesses or businesses where neither male nor female owners predominated. In all, the theme is that women owned firms are smaller than those of men, and often deliberately so.

HIGHLY SEGREGATED WITH RESPECT TO INDUSTRY BASE

Women owned firms are among the most highly segregated in the world with respect to industry base. The 1997 *ABS Year Book* (ABS 1997) examines the overall structure of the small business sector. It reveals the following about small businesses operated by women in 1994-95:

Of the 310,000 women working in their own business

- 28% were in retail trades
- 14% were in property and business services
- 11% were in personal and other services
- 9% were in construction
- 8% were in manufacturing
- 8% were in health and community services

Similarly, while a little more than one-third of small businesses are operated by women, they tend to be over-represented in the following:

- education (61%)
- health and community services (55%)
- personal and other services (52%)
- accommodation, cafes and restaurants (48%)
- cultural and recreational services (43%)
- retail trade (40.2%)

LEGAL CHARACTERISTICS RELATING TO WOMEN-OWNED BUSINESS

There are a number of features of the way the law affects women business owners, and the structure of their firms differently from men and their firms. They include contractual relationships, home-based businesses, women as partners in businesses, responsibilities for debt and fairness of property division when a marital relationship ends, and rural businesses involving women.

Contractual relationships The Australian Law Reform Commission has found that the law regarding independent contractors tends to favour men over women. This is because a worker working away from home is more likely to be regarded as an employee. This is a gender-biased test since male independent contractors are more likely to be in this situation than women, who typically work at home. In addition, the legal distinction between an employee and an independent contractor is unclear, leading to uncertainty about whether women contractors are seen as genuinely in business for themselves. The same study has found that women independent contractors tend to earn much less than their male counterparts, and to be more isolated.

Home-based businesses While the majority of women-owned firms are not home-based, it is still true that women are more likely to run home-based businesses than are men. This has an unfavourable consequence for women, arising from local government by-laws restricting home-based businesses.

Women as partners in businesses A larger number of small businesses run by women compared to those run by men fall into the category of sole proprietorships and partnerships which offer no limited legal liability.

Implications of relationship breakdown When a relationship breaks down, and division of property follows under the law of trusts, the law disadvantages women because of its preference for financial contribution rather than other forms of contribution. As we have seen earlier, women often contribute to a business in terms of unpaid labour, and will be disadvantaged in this situation. The law does not deal adequately with cases of "sexually transmitted debt" because it fails to respond adequately to issues such as the quality of consent, the fact that such guarantee transactions are not made at arms length, and the injustice is suffered mainly by women who guarantee their husbands loans, and end up financially disadvantaged.

Rural businesses involving women Farm women are often categorised as non-productive "sleeping" partners which affects the award of damages in cases of negligence resulting in personal injury. Women operating businesses in rural areas are more likely to have difficulty gaining access to child care and relief for child care costs. Finally, farm women are often not sufficiently aware of their rights and obligations in relation to the family business, and access to legal advice for rural women is limited.

SUPPORT FROM FAMILY MEMBERS

While one study (Yellow Pages, 1996) reports that women are more likely to have family members involved in their business than men (79% compared to 70%) most studies tend to show women going it alone. Many studies have reported claims from women that non-participation and sometimes opposition from spouses is a problem for their business operations. Studies of family business (defined as businesses in which members of two or more generations of the same family are actively involved) also suggest women's role in the business is consistently under-recognised.

EDUCATION OF WOMEN BUSINESS OWNERS

While women business owners are better educated than the population in general, and even compared to their male counterparts, the path they pursue towards business ownership has frequently been characterised in the research literature as "less strategic" than that of men. That is, they tend to have less directly business-related education in both the sense of the techniques of business, such as accounting and finance, and education related to the product or service the business offers (Barrett, 1997). This is also echoed in a differing business growth pattern of the businesses themselves. The lesser amount and quality of business-related education and experience of women business owners compared to men may be both a cause and a result of the lesser amount of time women-owned firms have been in operation.

Nevertheless, the notion of a more or less strategic approach to business ownership shows signs of being a value judgement based on a view of business education that assumes a direct and clearly defined path into business is superior. We shall revisit this view in the section on motivations.

LIFESTAGE

No data is collected in Australia regarding age of women entrepreneurs which can be collated with the age of their businesses. However, it is known that 64% of all small business owners are aged between 30 and 50 years, and that a somewhat higher proportion (70%) of women small business owners compared to men are in this age group. Since the median age of starting a family in Australia is 29 years, it is in the prime age group for business ownership that women are also typically faced with child bearing and child rearing responsibilities.

MOTIVATIONS

Researchers have been struck by characteristics that seem to be particular to women small business operators as a group. Differences that are frequently commented on include in the reasons women start businesses, and their seeming lack of entrepreneurial drive and aversion to risk-taking behaviour. These are all reflected in the tendency of women's businesses to be smaller.

Barrett's 1997 study of 78 business owners suggests a link between family responsibilities and women's apparent preference for small scale operations. Other factors emerging from that study include a desire to give priority to the location and ambience of the working environment, and to keep control over how time is organised. Finally, participants frequently spoke of a hobby growing into a viable business, a desire not to confine themselves to one project, and a desire to have adequate time and energy for both business and family responsibilities.

The problem of diversity in the users of VET policy

Now that some of the major characteristics of women-owned firms, and the way they differ from male-owned firms have been outlined, it is appropriate to consider some features of VET policy at the end of the twentieth century. To do this, it is helpful to consider at the outset who are the likely *users* of research into VET for women business owners. This is because the goals - whether implied or explicit - of the users of the research, especially what they seek to develop in terms of policy for small business, may appear as having unwittingly constrained the research approach into this group who, as the statistics in this paper have shown, clearly differ from their male counterparts. The users of the research can be considered to be, broadly speaking, firstly the government commissioning the research and its policy-making bodies, and secondly the providers and clients of VET itself. Let us see initially how the first of these two groups has conceived of the business environment generally, and hence how it conceives the business research in procuring and maintaining the relevance of VET for this environment.

GLOBALISATION

The latter part of the twentieth century has been characterised as the time in which the phenomenon of globalisation - though gaining ground since the mercantile age - attained an unprecedented momentum. A shorthand definition would include the belief both in the accession of global corporate power and the inevitability of a globalised economy. Many would also note that the term is generally accepted with enthusiasm by business, management and human resource management researchers and practitioners (Hall and Harley, 1995; Sklair, 1996). The call to globalise as rapidly as possible tends to be a key feature of policy measures designed to ensure a skilled workforce advocated by such bodies as the Organisation for Economic Cooperation and Development (OECD), the World Bank, United Nations (UN) and the European Union (EU), as well as recent federal governments, of both Labour and Liberal persuasions in Australia.

Given the acceptance of and enthusiasm for globalisation by both the previous and present governments, it has become virtually a cliché that policies for industry and "business" both large and small, as well as education for work related training, must now be located within a global environment, and poised to assist the country to succeed in a globally competitive era.

ECONOMIC DEVELOPMENT

As a facet of the trend towards globalisation and the need to compete globally, but also in its own right, small business has for the last decade been viewed politically as central to economic development and increasing employment opportunities in Australia. The overall goal of economic policy under the Howard government is set out in the opening pages of the document *Investing for Growth* (Australia 1997). Its stated aim is to deliver "stronger sustainable growth, higher productivity, expanding opportunities and rising living standards." In direct pursuit of this goal, education has become a means of maximising the contribution of human capital in the process of wealth creation.

What this strategy tends to overlook is the diversity of approaches that results from the ways economic development occurs differently at different levels: global, national, state, regional and local. Researchers such as Childs (1997) have pointed out some of these differences: the dependence of local economies on cooperation rather than competition, the ways local economies' priorities may actually conflict with the priorities of nation-level goals, and so on. The same can be said for small businesses, which may have different local and regional relationships from those that are typical for larger businesses, and be more tied up with the well being of the region in which they are located than the vagaries of the share market and global economic trends.

INDUSTRY RESTRUCTURING

A further feature of the activity associated with rebuilding the national economy and securing its place globally is industry restructuring in all its forms: downsizing, privatisation, outsourcing, a variety of flexible work practices and multi-skilling. While these mainly concern the interaction of business with the state, there has also been considerable emphasis on reforming how individual enterprises do what they do. Beginning with the Structural Efficiency Principle (SEP) in the late 1980s, various forms of change in the relationship between employers and employees have been underway. In particular, large employers - designated as "industry" - have been accorded both increased political status and increased power and authority within the industrial arena.

THE CHANGING NATURE OF WORK

As a consequence of the changes already noted, there have also been considerable changes to the way work is organised. Traditional notions of career paths and permanent employment are two cases in point. The emergent pattern in many businesses – but especially large ones which are increasingly taken as the implicit model – is for there to be a small core of permanent workers and an increasing number of peripheral (part-time, casualised, marginal) workers. Core workers, especially as their jobs increasingly involve the use of communication technology, are often described as "knowledge" workers. This group is experiencing both work intensification and extension of working hours, while at the same time being expected to chart their own course through the world of work. That is, they take responsibility for their own work related learning and training, and negotiate their own conditions and rewards. Given the need for an individual to create his or her own career path, many people who in the past would have been employees are now classified as self employed – either by necessity or by choice.

INDUSTRIAL RELATIONS

Given the greater political status given to the conservative political agenda, it is scarcely surprising that the key words in industrial relations for the last decade and more have been flexibility and productivity. At one level, it could be considered that small business and their operators are already expert in the art of "flexible" work practices. While such practices are most often negotiated in the workplace in an informal manner, and without the support or intervention of unions (since small business has always been characterised as relatively devoid of union presence), a number of trade-offs between employee and employees can be seen to result. One of these relevant to this paper is the trade-off between formally recognised and accredited training, linked to levels of skills and pay, and non-accredited "learning on the job". Supposedly new ways of organising work, those which are based in the workplace and which are supposed to deliver competitive advantage, may have no potential to benefit small business because they have already been unofficially used for many years.

ENCOURAGING SMALL BUSINESS GROWTH

The developments outlined so far as being among the explicit and implicit goals of policy makers all point to the generalised goal of establishing a pro-business political climate. In addition, Australian federal and state governments have actively targeted increasing the overall number of small businesses as a major area of economic policy. The current government's aim for 1998 of creating 40,000 new small businesses in Australia, while rhetorically recognising the significance of small business in the Australian economy, is also aimed at creating jobs within a stubbornly high unemployment environment.

The users of VET research for small business – a certain diversity

If these are the explicit or implied goals of the government-based commissioners and users of research into VET for women business owners, how do they square with the goals - so far as we can ascertain them - of the other group of research users, the VET providers and their clients?

Given the data presented earlier on the differences between women owned businesses and men owned businesses, as well as the different experience of the business environment of the two broad groups of users of VET research, there are likely to be considerable differences between the aims of the two groups. As we noted, the reality of globalisation and the degree of enthusiasm with which it is likely to be embraced, could be expected to be very different things for small and large businesses. Even where the goal of globalisation is welcomed by small business, the means for small business to achieve competitiveness is known to be different from that of large business, with small businesses needing to maintain a closer commitment to the needs of their immediate communities. Merely encouraging small business growth because it is assumed to be a common aim for large and small business, may in fact overlook the volatility of the small business sector. Even the most basic of small business courses points out, along with Collins et al (1995), that small business is a high risk affair with high casualty rates, especially within the first five years. The possibility of bankruptcy is a daily reality that is often beyond the control of the small business operator.

To add to these fundamentals, the traditional "on the job" approach to training typical of small business - now being regarded as a possible model for large business - may, as a result of the accreditation/non-accreditation trade-off, actually mean that being trained in a small business may well bring less recognition to those being trained *and* those businesses doing the training.

All this could already be said as a generality about the different goals of the second group users of VET research, ie small business in general, irrespective of whether the business is male or female owned. However, to add to the complexity, it needs to be recognised how much less is known about female owners of businesses than their male counterparts. While there is some consensus about some characteristics of white, well educated and middle class women business operators, there is little definitive information about other groups of women. Roffey et al (1996) rightly point out that the category "women" needs to be recognised as a concept accommodating considerable differences across cultural background, socio-economic status, family structure, and so on. In the face of this ignorance, many kinds of classification error become possible and even probable. The original classification error of believing that the interests of small and large businesses are similar in respect of globalisation, and the other developments listed, can only be compounded by assuming that the features and interests of male owned small businesses are essentially the same as those of female owned ones. This in turn is compounded by assuming that the interests of all female business owners are the same when in fact they cover a diversity of groups, some of them poorly understood.

In particular though, we need to be aware of assuming that the trend towards greater numbers of women owned businesses necessarily translates into a more rapid or at least a commensurate increase in small business employment. It is possible in any case to overestimate the contribution of small business to employment, and to overlook the fact, for example, that over half of all small businesses have no employees. The phenomenon of the comparative "feminisation" of some areas of business also has some lessons. While these areas of a comparative concentration of women owned businesses form a major proportion of the service sector, and hence are perceived as growth areas for employment, this growth has by not manifested itself in terms that would justify the glowing projections of some policy makers. In particular, women do not yet have a major presence in information technology focussed industries.

Further, and by no means finally, the clichéd view that women's entry into business is "less strategic" may seem far less certain and even desirable if more research is done into what is emerging as a radically different goal for being in business in the first place on the part of many women business owners. Having a varied educational background and deliberately keeping the business small, at least in comparison with male-owned businesses, may suggest a very strategic approach to managing the demands of business ownership. The strategy would allow a reasonable income that allows room for other aspects of life. It would also allow an individual to exercise a large degree of control over her working life.

There is a further revision needed of views concerning women's supposed lack of an entrepreneurial drive and aversion to risk-taking behaviour. Many studies indicate that women's businesses are less likely to fail than men's. They attribute this to better preparation at start-up, keeping debt and overheads low and pursuing other deliberate strategies aimed at keeping the business small (Employment and Skills Formation Council 1994). If this is so, we need to question beliefs frequently enshrined in policy, that women in business need to be encouraged to behave more as male business owners do.

Towards a remedy – furthering a diverse research agenda

What do we need to do to prevent the surreptitious but still damaging tendency to classification error in considering the research agenda for VET aimed at women in business? In the first instance, it might be argued, we need to separate the political interests of the commissioners of research from those of the research subjects. Given the inevitable link between the political and economic agendas of government, and the perceived importance to these agendas of business, including small business, this must remain a distant hope. At least, however, it should be possible to maintain a plurality of views - an acceptance of the likelihood, indeed the inevitability, of diversity in this particular research agenda.

QUALITATIVE RESEARCH TECHNIQUES

So far as research techniques are concerned, an increased attention to qualitative research approaches holds some promise. Qualitative research involves getting subjects to speak for themselves, in their own voices about their own selection of issues. Qualitative techniques have long been advocated as the appropriate approach to getting subjects to comment on the "residue" of statistical studies - those unexplained or "odd" findings that make sense only in the light of research subjects' comments on them. However they are also ideally suited to developing new themes, discovering the topics of interest to new and unexplored groups of subjects, where it is dangerous to assume that ready-made research instruments with built-in parameters and foci will be adequate.

COMBINATIONS OF RESEARCH TECHNIQUES

A problem we have already discerned with current research into women business owners is that information is derived from data sets unlikely to reflect the situation of women business owners. The fact that business statistical data sets tend not to include agribusiness, or family business as a specific kind of business means that women's contributions to these two areas tends to remain hidden. *Combining* qualitative techniques with analysis of traditional statistical data sets that are different in that they are informed by a perspective that aims to include previously hidden groups such as women, will go some way towards remedying the situation.

All this will take time. The task needs to begin with a commitment to recognising the value of diversity - of user perspectives, of training agendas, and of business and even national goals.

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AGEING WELL: NEGOTIATING LEARNING IN AGED CARE FACILITIES

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1. Introduction

This pilot project investigates ways staff in aged care facilities (ACFs: formerly referred to as nursing homes and hostels) learn in their workplace. It was funded by a University of Melbourne *Special Initiative Grant*. The researchers come from different paradigms: the qualitatively-informed Education tradition, and the quantitatively-informed Medical model. Yet this is simplistic, since all three share a professional interest and expertise in experiential and particularly problem-based learning (as used in Newcastle and McMaster Universities). The project team has three major areas of relevant expertise: geriatric medicine, clinical epidemiology and medical education (Darzins); adult education (Beckett) and professional development/training (Gough). The aim of this research is to gain an understanding of the factors that influence the learning needs of staff in ACFs and whether workplace learning is possible in these settings.

We report on the project to date, particularly on the negotiation of the research. We illustrate the enactment of these negotiations in two of the six ACFs with which the project team is most involved.

2. Background: Educating Cinderella

Cinderella has featured in the emergence of adult learning on the stage of Australian education policies. Many share the hope that the time is nigh for Vocational Education and Training (VET), the 'upstairs' high-profile player on the stage, to be genuinely influenced by the 'downstairs' low-profile understudy, adult and community education (Come In Cinderella 1991; Beckett 1993; Beyond Cinderella 1997). ACFs are community-based, but unlike neighbourhood houses or local learning centres, they are not voluntaristic, nor are they ostensibly sites of learning. Yet the need to address learning needs within ACFs is increasingly urgent.

In the reformed Federal aged care policy arena, there is a new emphasis on the quality of care provided by ACFs. An acceleration of demand for accommodation as the baby-boomer demographic heads into the so-called 'Third' and 'Fourth' Ages (Hurworth and Crombie 1995) is anticipated. Community anxiety about the ACFs and Federal funding contributed to policy reformulations during 1998. Aged care policy was prominent during the Federal election campaign, In several 'crisis' stories, *The Age* Insight team provided an expose of an 'increasing number of nursing homes...plagued by serious deficiencies' (The Age 1998; p1).

This paper is not about the prospects of Cinderella going to the ball. At least Cinderella looked forward to a glamorous future. There is nothing glamorous about most ACFs. Our research centres, not upon the residents of an ACF, but upon the staff.

Nevertheless, while our paper does not concern the needs of residents in ACFs, this is a vast and under-recognised field, with connections to health and well-being yet to be explored. It may be the greatest policy challenge facing governments in the Western world as their populations age, and the costs to the public purse of health care and a declining revenue base collide. Here the rhetoric on 'lifelong learning' gains a poignancy not even the Cinderella of adult and community education has yet come to terms with. Cinderella does, after all, have her whole life in front of her. Aged care has, by contrast, an image problem. Experts in the field have recently stated (*Education and Ageing* 1998; p9), in reviewing UK lifelong learning policy:

> Later life is only associated with conditions of ill-health, dependency, frailty, poverty and lack of dignity. There is nothing about the freedom, activity, challenges, altruism and positive contributions to society which characterise the lives of many older people, and which, while being in themselves educational, also call for support from a national learning culture.

Given the above aged care and lifelong learning policies' nexus, more than ever before, the adult learning - the 'professional development' really - of the regulated, unregulated and managerial staff within both nursing homes and hostels across Australia should be a priority. Yet perceptions of unglamorous contexts, and unglamorous work, tend to render invisible the learning needs of such workers.

Who are the workers in an ACF? The profile is shaped not only by nursing (both Division 1, traditionally known as Registered Nurses, and Division 2, traditionally Enrolled Nurses), but also by health care work of widening variety: physio- and other therapies, welfare and other agencies, and a growing number of 'patient care attendants' (PCAs), 'nursing assistants', and the like. Various stages of residents' medical dependency necessitate 24 hour care (especially the high dependency of the 'nursing home'), so shift work is a feature, and so is the part-time, female composition of the workforce. Clearly the nursing/non-nursing divide is up for re-negotiation as patient care attendants take up some of the jobs which ENs and many RNs would traditionally have done. In some low-care ACFs these 'unregulated workers' provide the whole workforce, but in others none are employed at all. All of these aspects require managing and leadership (especially with heightened public expectations and media attention, and with accountability to regulatory bodies). Sophisticated local capabilities are much in demand but are often lacking, and 'directors of nursing' are expected to meet this demand.

Nurses and allied health professionals have a strong initial and evolving post-initial raft of professionalised, credentialled and registration requirements. However, in the area of continuing professional education, gerontic nursing is not well served. . Recent innovations for PCAs include TAFE and Australian Nursing Federation courses. Some tertiary graduate diplomas also target ACFs as generic workplaces. Despite this, little formal education or training is available for most of this part-time, female workforce. Indeed, most of those who are not nurses or allied health professionals have little formal qualifications, but may have years of experience. Low levels of literacy are common. Yet these women who work 'down-stairs' are now expected to adapt to local and national versions of new, higher community expectations.

3. Negotiating Workplace Research

Since 1995, the National Ageing Research Institute (NARI) (an affiliate of The University of Melbourne) in collaboration with the North West Hospital (NWH) in Royal Park, has conducted a seminar series for health care professionals working with older people. This program has provided insights into the conduct of continuing education in the aged care field. The approach so far appears to be marked by:

- what is *ad hoc* rather than planned;
- little attention being given to on-site/off-site transfer of education;
- involvement by clinicians (eg medical practitioners, nurses, allied health professionals, psychologists, social workers, research scientists);
- cursory attention to contemporary adult learning theory and practice;
- insufficient awareness of vocational pathways or of accreditation ;
- no basis in known learning or specific clinical practice needs;
- little effective use of contemporary educational/communication technologies or contemporary professional practice structures such as competence .

The aged care sector comprises a large number of small facilities (many with fewer than 20 staff) where education and training expertise rarely exists. Like most small businesses (Karpin 1995), individual ACFs require assistance to analyse education and training needs, explore optional solutions, and design and evaluate effective educational opportunities. Facility managers are beginning to seek assistance from education and training providers to design effective educational interventions. The new regulatory environment makes this an imperative. Twelve ACFs in the inner northern and western suburbs of Melbourne were identified from the larger number with which NARI has contact, covering both those with hostel and nursing home orientation. Six of those twelve form a Control group; six comprise the Intervention group. A questionnaire was devised to survey the formal and informal education and training experiences of up to about ten staff in each of the twelve ACFs, when the Project commenced. There is a follow-up questionnaire for the same staff when the Project concludes. Combining this data with observational and conversational data, we want to ascertain how the intervention described below made a difference to the staff in the latter six ACFs, compared to the Control group of ACFs where there was no intervention. Since August 1998, we have been working with the six ACFs in this Intervention group as follows:

- At a meeting at NARI we invited the six ACF managers to consider some practical ways they can encourage their staff and themselves to take 'workplace learning' on board;
- We encouraged those managers to take these ideas back to their own workplace, and develop a modest 'on-site' staff development plan, in consultation with key staff and ourselves;
- We facilitated the implementation of these site-based plans, concluding towards the end of 1998, whereby we met with each of the local learning groups (ie. at each ACF) regularly, to monitor and assist with the implementation of the learning plans, identify and record progress, observe and report impediments and successes, assist with problem solving as appropriate, and to ensure deadlines can be met. (This work is now concluding)

We will evaluate this approach early in 1999 to find out if our approach is feasible in other, similar workplaces, giving attention to the learning needs of different groups of staff and managers, criteria for selection of appropriate learning solutions, and recommendations for structure, implementation and evaluation of learning plans. What was crucial in this sequence was the emphasis on the 'ownership' of the local learning need for each ACF, and the structuring of that need as a workplace 'problem', which all relevant staff could identify with. In this way we wanted to redress some of the difficulties in workplace learning listed above arising from NARI activities with ACFs since 1995, and which have been discussed more generally in VET scholarship in recent years (eg. Beckett and Hager 1998, Boud and Garrick 1999). Negotiation took place at each of the six sites, involving between 8-12 staff and the ACF's manager or representative, and one of us, so that the learning plan had relevant content for that site. What follows are two examples from the range of six negotiated local learning plans. Both plans are, we believe, process-driven, because they are shaped by the opportunities, constraints and contingencies of the specific workplace itself, even although, of course, the larger policy context outlined earlier, and NARI's own experiences, shape the very need for such workplace learning in the first place.

TWO EXAMPLES OF SUCH LEARNING PLANS WERE:

Title: "Improving the Management of Residents with Dementia"

Workplace Problem

Challenging behaviours amongst the residents in the dementia unit at Pleasantville (pseud.) require a sharing of staff experience in addressing these behaviours. This is difficult when staff work patterns (shifts and other responsibilities) engage individual resident behaviour patterns in many different times and ways.

Learning Needs to be Addressed

Communication skills (inc both initial documentation and verbal discussion between staff)

Teamwork in analysing 'critical incidents'

Reporting of implementation of responses to such 'incidents'

Format and Structure

Unit staff to meet fortnightly (Wednesdays at 2 pm, which is as much as possible a common time), outside the unit, with DB as facilitator.

On the alternate Wednesdays, each staff member to meet with her 'pair' to swap experiences of any challenging behaviours in the preceding few days, and what was done to address these at the times these arose. Each 'pair' to collect brief notes about such incidents and table a verbal report each fortnight with the unit staff as a team. DB to record these discussions.

Two months of this structure, then an evaluation, and summary of workplace learning.

Title: "Using Handover to enhance Holistic Care of Individual Residents at Sunnyside Nursing Home"

Workplace Problem

Daily 'Handover' from one shift to the next is not efficient: the type and volume of information and the way it is presented often leave untouched important background to or changes in an individual resident's condition or needs.

Learning Needs to be Addressed

Researching resident history and current concerns

Presentation of Resident of the Week -volunteer RN Div 2

Facilitating group discussion - volunteer RN Div 1, including record keeping

Responsibility for the project - Charge Nurse (CN)

Format and Structure

Wednesday 2.45-3.30 - night shift staff are encouraged to participate, offered extra 30 minutes' pay. Staff attend if they are interested and available

At the conclusion of the 30 min education session, traditional handover takes place for 15 minutes.

The CN maintains a journal during the project

Evaluation:

After two months of this structure, an evaluation session to be facilitated by JG to get first hand input from staff involved. A modified nominal group technique will be used, including questions provided by the CN. This evaluation session will include group discussion and suggestions to the management regarding their preference for continuing/discontinuing the sessions. The CN and JG will separately reflect on the management learning as reflected in her journal and as it emerges in the discussion.

4. Enacting the Process

4.1 EPISTEMOLOGICAL ENACTMENT:

"Improving the Management of Residents with Dementia"

Seven staff, both nurses and PCAs, all females, who work in the dementia unit at Pleasantville ACF met with DB regularly. Meetings #1 and #2 were mainly involved with sharing experiences with certain residents, but across meetings #3, #4 and #5, the adult learning perspective was made more explicit. Consider these notes, taken by DB, and verified by those seven staff.

Meeting #3 Oct 7 1998

Resident B*****
Update: Barbara: B***** has been hospitalised with a broken femur. Maree visited her - drinking with syringe etc, and with family support at meal times. Susan: not on IV now

Resident C****
Update: Judith: C**** back from hospital 30 mins ago (Susan: quite dopey too) - balance problems, some aggression. B and S both astonished to see her returned so soon - medical matters still present

Resident B***
Update: Judith: goes to bed fully-dressed. Marj: B*** required full change of clothes this morning. S: use a lip-plate for lunch, some wandering the unit. Marj: agreed - moves furniture, 'dusts', B. better at night now, and S agreed, as B*** heads straight for toilet in the morning, yet today's incontinence is less typical. Maree and Marjery agree recognition is quite good. S: hairdresser return trip is significant - sees the door! J and Marjery agree that patterning B***'s days is difficult

Resident M***
Update: Barb: the medical advice was to 'modify' the TLC, and change the medication. J: still weepy, even howling. B wondered if M*** liked being a resident. M noted M*** can shower OK, reluctant to come in the door (can see reflection?). J: noted M*** strong on teeth-cleaning. S wondered if there was a lot of frustrated communication there, B wondering if a firmer line was called for.

General points to emerge in discussion agreed on by participating staff:

1. Changes in staffing, and family visits (etc) are significant for these residents: they may see these as 'interference' with their lives - there's an ownership tension always present for them.

2. Its essential to have a wide range/repertoire of responses to engage 'challenging behaviours' - must constantly try out things, since across the 24 hrs and several staff, a resident in this unit will vary in behaviour often dramatically.

3. Hospitalisation turns residents into patients - off-site, they tend to become medical diagnoses, and then are liable to the 'throughput' priorities of a hospital, arriving back at Pleasantville prematurely, and disoriented, and without the prospect of high-level medical care continuing.

- Structures and patterns are essential for these residents, but they frequently struggle to re-invent these.

Meeting #4 Oct 21 1998

Resident B******
Update: still hospitalised, and w/listed for a nursing home (S)

Resident C****
Update: (B) aggression, deterioration req a full medical review esp psych aged care assessment (Maree) and possible re-placement: but (B) 'Where do they go ...?'

Resident B***
Update: (M) mumbling, incommunicable: 'What on earth is going on?'

(Janice via Maree) toileting problems, some agitation: discussion of continence-related reasons (B, J, S: 'I'm finding....'). Good support from medico, and medication is effective; family back and involved.

Maree: soft food leads to knife on the tongue: 'I think she should have spoon'

(J) 'I provide a spoon for savoury mince'

(M) reversed the utensils to see if that helps

Resident M***
Update: (J) sociable - passed the 'nuts and bolts' around; (L) any medication changes? Very lucid. (B) no changes so far. But J and M: different over the weekend, very teary. (S) She wants to stop in, so 'Go and sit in the lounge...'. Maree: lots of touching, crying: 'If you stop, I'll take you for a walk'. Janice (via Maree): kept occupied folding bin bags, but (L) concentration diminished - only folded two towels.

(Marjery) M*** told B*** to 'shut up' when she was excited!!! (B) medico ordered some medication changes from today.

DB asked staff:
Consider what you do in such 'challenging' situations as the above. Is it:

- 'guessing' (WHY is Resident doing this?) OR
- 'trying' (WHAT IF we do this?) OR
- 'showing' (WHEN we do this...)

Which of these more accurately describes what you find yourself doing?

General points to emerge in discussion, agreed on by participating staff:

- 'Trying' (including both now - eg. 'I think she should have spoon' - & going away and trying later) is most apt. This is followed by
- 'Guessing' ('What on earth is going on? Inc. looking for other evidence e. g. urine smell). This indicates that
- 'Showing' is the least apt (requires the most reflection: staff wouldn't find themselves 'showing' because of the ethical implications eg. bottom-washing has a dignity aspect).

Meeting #5 Nov 4 1998

What do I find myself doing which expresses empathy?
The group then reflected again on their own learning (cf. previous meeting):

Discussion produced agreement that staff 'talk on their [residents'] level' (Maree), which is hard until you get to know residents, and talk in such a way that humours residents: eg. 'I feel good today/you look good today' to start them off, rather than ask 'How are you...?' Staff not likely to get at a resident's condition directly: recognise there's a telling and re-telling of stories, so look for signs of a 'new story' emerging (Barbara). The stories are indications of 'residents' realities' - essential for empathetic staff in dementia units to come to understand.

Analysis

These Pleasantville staff are able to articulate a process of workplace learning shaped by epistemological considerations. In particular, they are able to share their learnings of what works with individual residents' 'challenging behaviours' (or 'hot action': Beckett 1996) within frameworks that are *chronological* (times of the day or night, events like visits and meals), *medical* (dosages, clinical matters, hospitals), *psychosociological* (relationships with staff, families, each other) and so on. Here the goal for the staff is pattern-making and re-making, 'reading' a critical situation or challenging behaviour such that it then can be better understood. This instantiates Dewey's view (in Garrison 1999) that the ends of practical action and judgement emerge in a creative effort to overcome a 'disrupted context' - and a dementia unit is eminently disruptable. These staff, it will be noted, engage in practical reasoning, in attempts to shape stability within the unit. This is fundamentally an Aristotelian epistemology, since it is concerned with the dynamism of means and ends, the respect for practical (as opposed to theoretical) action and for the embodied subject. As history tells us, this confronts much of Western education, with its traditional focus on Platonic epistemology, and by Cartesian ontology.

Yet the fieldwork represented by Pleasantville reveals a deeper analysis. When pressed to identify what they find themselves relying upon in the moments of greatest workplace challenge, the staff opted for 'trying', rather than guessing or showing. Guessing and showing are candidates because they represent, respectively, 'double-loop learning' (hypothesising, or 'what if...) and the artistry of practice. Argyris and Schon, in the late 1970s, and Schon in the 1980s, have advanced these two epistemological considerations as ways to understand organisational and workplace learning - at least for individuals.

But in these more postmodern times, we are attuned to the diversity of voices (or narratives) represented amongst a workforce. How do PCAs and nurses understand their practical workplace challenges? By acknowledging their own sensitivity to the value of empathy, the staff at Pleasantville showed that pattern-making and re-making had a more profound epistemological significance. They do 'try' - but not merely to re-stabilise a situation. Their 'trying' is expressed in discourse (that is, speech, actions, meanings) which invites and elicits residents' own narratives. Caring for the dementing is thus regarded by staff involved as anticipating the need to enter into marginalised discourses, that is, it has an ethical purpose, which is, nonetheless up for re-shaping each day, or rather, each shift.

Here then we see entwined in one profound epistemological enactment not only Aristotelian practical judgments, but also a privileging of what some prominent postmodern adult educators have called the 'local, personal and the particular' (Bryant and Usher 1997).

4.2 ORGANISATIONAL ENACTMENT

"Using Handover to enhance Holistic Care of Individual Residents at Sunnyside Nursing Home"

A small organisation with a traditional hierarchical structure and procedures, Sunnyside Nursing Home highlights the impact of organisational variables on workplace learning as suggested by the Hayton and Loveder model in 1992, cited in Hager (1997 p. 21). The Sunnyside workplace learning project demanded sensitive enactment through a tiny maze of paths and crevasses.

The Agreed Learning Plan

The DoN and CN agreed that an 'education session' would meet for 30 minutes each Wednesday prior to the usual daily Handover, that it would be open to all RNs Div 1 and Div 2, and would be structured around a presentation on a selected 'Resident of the Week'. One volunteer Div 2 would research the resident in the week prior and a discussion would be chaired by a Div 1 volunteer. It will be called an 'education session' to give it equal status with other inservice activities, attendance will be recognised by a NARI Certificate and will be recorded in the staff education records. Participating staff will be paid for the extra 30 minutes beyond their shift.

The Other Learning Plan

The CN was told she had responsibility for the project, as an opportunity for her to take more of a management role in the organisation. Upon my suggestion, she agreed to keep a journal recording her journey in this project, an opportunity for management learning in the context of her work (Beckett in Boud 1998)

The Action On Stage

It was immediately clear that the initial plan to let the site project run without further intervention was not feasible; the first phone conversation indicated that the first session "Went well but ... got off the rails", and had become "bigger" than the DoN intended. The DoN issued a staff memo that delineated the timeframe for the sessions. I became more active in observing the sessions and meeting with the DoN and CN.

The first education session I observed ran smoothly. The volunteer Div2 reading verbatim the many pages of notes she had made about the Resident's history, her needs and suggested a number of strategies. She took 25 of the 30 minutes to give this presentation, no one interrupted or made any attempt to change the way the time was being used. A crammed two minutes of discussion concluded that this was a good holistic picture of the Resident to have drawn, but that the case was so difficult and complex that everything had been tried before in some form, and staff should be comforted that they are doing the best they can do. The presenter was congratulated for her thorough presentation. This seemed to be a passive group, unaccustomed to group process and group decision-making. It was traditional content-focused and "teacher"-centred approach that opened up to discussion which was quite open and crossed the hierarchical divides in information and ideas sharing.

Upon invitation to comment, I suggested that a 5 minute presentation means about 500 words to prepare and I reiterated that the rest of 30 minutes can then be used for discussion, problem-solving and planning for the next session.

The group was basically working as the CN and I had envisaged it, and she and the participants were pleased that the research and presentations were new and good development opportunities for the individual staff.

The Learning Plan was proceeding quietly and productively. Sessions appeared to make more use of the available 30 minutes and discussion across the Div /Div2 divide was constructively approaching solutions to resident care and management issues.

Back Stage

What was going on between the sessions since the early implementation of the project, however, was important.

I arranged that prior to the session with staff I would meet with the DON and CN, a meeting which revealed that. It had been difficult and "cathartic" according to the CN, apparently explosive drama. The content of the very first session had touched some forbidden territory of care and management, and the staff had assumed that part of the purpose of the workplace learning group was some room to make decisions about the Resident of the week.

A Slice of the Action

Resident of the Week 'Cliff' (pseud.) - The dialogue:

Issues of concern raised: malfunctioning hearing aids, worsening visual impairment, increasing incontinence, arguments with other residents, not attending recreation activities

Agreement to focus on one issue: increasing reclusiveness

Presentation focused on discussion RN had with Cliff in preparation for the session that identified that embarrassment associated with incontinence and visual impairment were the issues affecting his social participation; Cliff suggested things he would like to do that staff agreed can easily be put into place. Staff comments in the evaluation session (see below) imply that without this learning group, the research and the time set aside to look at the whole person of Cliff, his problems and reclusiveness would have lingered unattended to. While in this case it was the RN doing the research and presenting the case, the whole group was involved in listening to the story, suggesting specific strategies and agreeing on implementation and trials

The session is working as a learning group in so far as the picture of the resident as whole person facilitates holistic thinking about the care.

DISCUSSION

- "The power of the WBL [work-based learning] approach is that it explicitly integrates organisational learning with individual learning" (ANTA 1996, p18). This project carried the weight of some organisational tensions and in experimenting with something new which ultimately gained staff and management support, the organisation seems to have learned/developed.
- Individual learning occurred in the learning sessions, as well as for the managers. Luckily, the learning journal provides a good record of this.
- Staff development: the decision the staff had made in the very first session about the management of the Resident was actually implemented after the furore, so they were rewarded for taking the power and initiative.
- In addition to the complexity of Sunnyside's workplace culture, the industry is characterised by shifts, part-time employees doing a 'second' job and residents who are always right outside the door for the direct care worker. The learning group contends with the unpredictability of shift changes and relentless resident demands.
- The project would have benefited from involvement of the staff in setting the Learning Plan and the arrangements for the Learning Group.
- The CN requested assistance with conducting the evaluation session, and provided the questions which she wanted asked:

> *What did you expect to get from the project? Were your expectations met?*
>
> *Did the sessions have the right focus? If not, what should the focus have been?*
>
> *What, if anything, has this project revealed about the skills among the staff group and the use of these skills?*
>
> *Should Sunnyside keep this program of education sessions going? If so, what should change to make it better?*

I asked questions like:

> *Given that the purpose of the project that the DoN agreed to was: ".....", what do you think it has achieved?*
>
> *What did you learn that you didn't expect to learn?*
>
> *What aspect/incident/role did you learn most from?*

One staff member's comments on what the project achieved: "Encouraged communication, facilitated teamwork; opportunity for everyone to have input on range of issues; increased awareness that handover needs to be precise and not lose direction"

Another: "Opened lines of communication; various levels of knowledge were valued in the group building a team between the junior and senior staff; less intimidating now:

Yet another: "Staff participate more in the care of the residents and some of the strategies have been implemented and some are working".

And finally: "It gave us an opportunity to generate ideas for interventions when we thought we had tried everything"; "see resident care as a whole now, not just a few items"

This selection of responses (hurriedly gathered in a 20 minute modified nominal group technique) suggests that this workplace learning group, has been a good experience for the staff at Sunnyside and the CN and DoN will most likely sustain it in some form. Workplace learning will probably become part of the structure at Sunnyside, (ANTA, p.18) and will continue to affect the culture and operation of the organisation.

- In this project, development of the Key Competencies emerge as one of the most likely enduring outcomes: collecting, analysing and organising information; planning and organising activities; working with others and in teams; solving problems through group processes. The value of the project as identified by the participants in the evaluation session highlights these competencies.
- In addition to the frequent cry in the literature (Hager, 1997, ANTA 1996) for management endorsement of workplace learning in particular and staff development generally, workplace learning also requires a 'manager as learning enabler' to smooth the path for the players.

5. Conclusion

There are many barriers to workbased learning in ACFs. These barriers include staff issues, physical plant issues and work-place culture issues.

The staff-related barriers include the fact that the work-force is largely a part-time work-force, there are low literacy levels, and there is a wide-spread perception that the job consists of "menial" physical tasks rather than tasks that require content knowledge, thought and reflection. There is no tradition of ongoing continuing professional education among the staff of ACFs and there are no opinion leader role models of ongoing professional education. It is also possible that the jobs themselves have a relatively low importance beyond the income they provide to the staff of ACFs. The work in ACFs may just be convenient ways of earning income rather than vehicles whereby staff attain self actualisation, which they seek and obtain in different venues eg in their roles in their family or in other social organisations. At a personal level there may be many disincentives to ongoing education. For example, the PCA who misses shifts to attend off-site education sessions will lose pay and will incur expenses (cost of the seminar registration) and will not gain any additional pay for the effort expended or improved skills or knowledge.

The physical plant issues that hinder continuing professional education in ACFs include such problems as the lack of a designated staff room, the paucity of up to date health-care text-books or educational videos (if any) that the staff could access. Furthermore, there is rarely an area that is obviously purpose built or at least designed to accommodate education in small groups (eg has blackboard or whiteboard, screen for overhead projector (OHP) or has the electronic equipment commonly used for education eg OHP and a television and video tape player. Needless to say in these environments where even the most basic of teaching and learning resources are seldom found, more advanced potential information sources such as current subscription nursing and gerontology journals (as opposed to "throw-away" journals) and internet access via computer is hardly ever available.

There are many work-place culture issues that hinder ongoing continuing professional education. These include the absence of professional requirement for maintenance of professional competence among the least trained of the ACF health care staff (eg cooks, cleaners, bed makers, and personal care attendants). Even among the more educated staff (enrolled and registered nurses) there is negligible requirement for demonstrated maintenance of competence. There is no clear reward for additional mastery. Indeed in work places where there is little apparent intellectual aspect to the work, individuals who undertake further education may be ostracised by their colleagues. In this work force there is little to "trade" other than physical work - information has little apparent value. For most groups, there are no financial incentives for ongoing education.

Despite these barriers our pilot project showed that we could provide / encourage work-place based learning. Our interventions were achieved with modest means. The fact that our approaches were readily received suggests there is a great need for work-based education. Perhaps like Cinderella's slipper there is a close fit between the educational needs of staff in ACFs and the education that can be provided by relatively modest work-place based learning initiatives.

Finally, we can conclude that negotiating research in ACFs has been interesting. The different backgrounds, training and professional experience of the members of the project team contributed to the richness of the project. The actual process of researching the workplace learning of certain ACF staff, was, however, particularly intense. After the initial negotiation of the 'learning plans', their enactment turned out to be rich in workplace dynamics. The plans themselves can be put to sound education usage, but more importantly, the negotiation associated with the project has the potential to change attitudes to acquisition of relevant knowledge.

Thus, at Pleasantville, staff constructed their experiential knowledge gained from work with dementia residents. Initially, this was by pattern-making and re-making. This could be more fundamentally understood as a process of reading and re-reading residents' 'stories'. There are ontological and ethical underpinnings for the epistemological enactment of the staff learning plan. These are amenable to postmodern, as well as Deweyan, scholarship.

At Sunnyside, staff constructed their experiential knowledge amongst a contested organisational culture. Here power and authority were significant parameters. When staff realised their traditional expectations need no longer pertain, and that there was a window of opportunity through which to glimpse new learning, then this influenced existing power structures. This both displays and interrogates the nexus outlined in mainstream business and management literature between the workers and the culture by which they are shaped.

In both settings, individual staff members' experiences are the 'raw data' for their workplace learning. The way staff interact and share their "raw data" is vital, but hard to capture. Some staff may believe they 'know' nothing since their formal education and training experiences are limited, or because their location in a hierarchy is such that they 'should know nothing'.. Yet we have shown that staff can be encouraged to alter their perceptions of their own knowledge, and convert their "raw data" into knowledge. This is a precondition to engagement in workplace learning. Once some of the traditional structures are side-stepped or negotiated, valuable learning in the workplace becomes possible. In all of this, it is important to respect the context-specificity of workplace-based educational research. The better provision of aged care is a national policy priority for Australia. The educational development of the staff in aged care facilities represents a massive, modernist investment in lifelong learning. This is important for the ageing Australian population. The attempt to structure learning out of local settings and experiences is a powerful, postmodernist strategy.

Our experience suggests that the approaches to work-place based learning that we implemented would most likely be readily accepted in other ACFs. This is an important consideration for the approximately 3000 ACFs in Australia, the organisations that attempt to police (at worst) or maintain (at best) the standards of care in the ACFs. Finally, those of us who might end up in ACFs or who have relatives who are forced to go to ACFs, would be less troubled by these events if we knew that the educational needs of the Cinderellas who work in the ACFs have not been ignored.

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RESEARCHING BY VET FOR VET: A STOCKTAKE/LESSONS LEARNT

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ABSTRACT

For five years VEAC, a research centre situated within VET (TAFE NSW), has been conducting a wide range of research, evaluation and dissemination projects. The Centre's primary aim is to conduct and support applied research within TAFE and across the VET sector in order to promote leading edge information on assessment and training issues.

The conference provided an opportunity to reflect on our research to date in light of the questions posed by AVETRA, under the theme of "Quality and Diversity in VET Research".

Introduction

As researchers we often reflect on individual projects but less often do we critically evaluate a body of work. Nor do we often have time to reflect on our role and purpose, our impact and influence on policy and practice, or our strategic directions. Most significantly for VET researchers, such reflections need to occur within the rapidly changing context of our practice.

Preparing this paper gave us the opportunity to consider in depth the changing needs and expectations of our customers and the implications for our Centre's future research activity and directions. Central to this analysis was consideration of what constitutes quality research within the broader context of national policy directions, changing workplace arrangements impacting on VET and changes within VET research practice and culture. We would propose that one of our key objectives is to consider how best we can ensure that the results of our research activity can lead to new knowledge and new approaches to VET by policy makers, practitioners and VET researchers.

As a result we would like to share with you some of our reflections under two broad questions:

- What are the main factors and questions influencing our Centre's research practice and directions?
- *What are the implications for VEAC's current and future directions as a VET research centre?*

What are the Main Factors and Questions Influencing our Centre's Research Practice and Directions?

WHAT IS QUALITY RESEARCH?

When considering this question a number of things came to mind. Firstly, for research to be perceived as representing quality it needs to be firmly grounded in context, both in terms of its process and its outcomes. In other words it should stem from a soundly constructed research question, it should examine the assumptions and contextual factors influencing its planning, conduct and analysis, and, most importantly, it should lead to new understandings and approaches to VET by policy makers, practitioners and VET researchers.

Further *quality indicators* for our research activity include:

- making a difference - ie. value, usefulness, utility, impact (both in direct and indirect terms)- particularly in terms of guidance for current practice and quality improvement at both policy and practitioner levels
- timeliness
- diversity - capable of reaching multiple audiences with multiple needs
- research which is capable of promoting collaborative, action learning frameworks for conducting research (with the aim of enhancing the quality, reputation, profile and research skill base of VET research conducted by VET practitioners)

Of course one of the biggest issues for us as researchers purporting to embrace such notions of *quality* is *how do we know we are doing quality research?* Part of our approach to this is to establish quality systems and mechanisms for review and feedback in order to maintain a strong focus on quality. Examples include:

- Independent Advisory Council for the Centre which focuses on the strategic directions of the Centre's activities in relation to the Centre's stated mission, its documented Business Plan and its customer and stakeholder needs.
- Establishment of a Reference Group for every project we undertake. This group comprises key stakeholders and its role is to guide and advise the research process.
- Criteria are also established for development of the research brief.
- Development of A Code of Research Ethics underpinning all activities.
- Quality systems for project management which include mechanisms for internal and external review of the research products, the research process and support structures, project officers, the project manager and the dissemination approaches.
- Regular customer surveys of key target groups and stakeholders.
- The formulation of a *VEAC Strategic Group* which comprises representatives from within TAFE NSW and aims to ensure that our research and related activities address key areas of internal customer need.

THE NOTION OF RESEARCH AS LEARNING

People learn a lot from being actively involved in the research process. Collaborative approaches to research provide opportunities for those involved to learn more than research methodology. They find that it can also provide a forum for critical reflection, strategic review and the opportunity to develop and test new ways of *doing* and *knowing*. We believe that this is a very important core role for our Centre.

A number of our recent research projects have actively incorporated action learning approaches within the scope of the research methodology. A good example of this is the DETYA funded *VET in Senior Secondary Schools project* conducted in 1998. This project used a combination of process benchmarking and case study methodology to investigate the models used to integrate accredited VET curriculum, structured workplace training and general education within a number of senior secondary schools throughout Australia. Significantly, teachers from each of the targeted schools were involved with the VEAC researcher as *co-researchers*. This methodology opened up the possibilities for these researchers to actively engage in an action learning and benchmarking approach via a process they described as a *journey of discovery around the research question.*

The paradigm of learning which underpins this research approach rests on the assumption that the full benefits of learning cannot be fully realised unless learners are able to apply new knowledge to implement changes in their own workplace context.

The collaborative nature of this action learning approach provided increased opportunities for those involved in the research process to be exposed to multiple perspectives, and ultimately lead to new understandings and actions - on both a personal level (eg. enhanced research skills for co-researchers) and within their workplace community (eg. through the action and reflection associated with new approaches to the school community's VET practice). Of course, it was the provision of adequate funds that enabled this methodology to be fully utilised.

CREATING A CULTURE OF VET RESEARCH — FOR VET BY VET

One further issue we are aware of as a VET based research agency is the significant higher education representation among government supported VET research. The higher education sector has a well established research culture and an infrastructure which actively supports and promotes research.

On the other hand, the VET sector is still developing a recognised and active research culture - particularly in terms of encouraging VET practitioners to embrace research as an integral part of their practice. VEAC firmly believes that promotion and support of practitioner grounded VET-based research must remain an integral part of its role.

With this in mind VEAC regards it as important to continue to capitalise on the strengths of a diverse VET research culture involving universities, TAFE, consultants and other research bodies. Examples to date include VEAC's long standing partnership with the Research Centre for Vocational Education and Training at the University of Technology, Sydney (RCVET). Additionally, the Centre for Vocational Assessment Research (CVAR) was established in 1997 as an ANTA-supported cross sectoral initiative between VEAC and the Assessment Research Centre (ARC) at the University of Melbourne.

Finally, AVETRA, itself, has a key role to play in providing a forum for critique and for assisting the improvement of linkages between those involved in VET research across all sectors.

THE NOTION OF INDEPENDENCE OF RESEARCH ACTIVITY

As a research centre in VET today it is impossible to deny the impact of funding sources and government (commonwealth and state) policies on the scope and impact of our research activity. A question for us to consider is how does being a funded centre impact on our independence in terms of our research priorities, scope, questions posed, methodologies, impact of findings on policy and practice, dissemination and utilisation approaches and so on.

Our research centre is based within the largest VET provider in Australia - TAFE NSW. Further it is located in (and accountable to) a specific Institute within that organisation. This reality has resulted in considerable reflection on our part on just what this means in terms of independence of our research activity. If, as stated earlier, we define quality research (in part) as research which is capable of leading to new understandings and actions, then the perception of independence is a central consideration to a research centre concerned with critique and improvement of current VET policy and practice. Issues we are currently attempting to address include:

- How do we balance our priorities and agendas with government funded and TAFE based (and even *host-Institute* based) priorities? How do we address the perception of independence of our research activity ie How can we best achieve a balance between the Centre's mission of a *VET wide* brief against the reality of being located within and financially supported by one of TAFE NSW's Institutes (this includes issues surrounding self funding targets, and balancing internal expectations, demands and priorities)?
- Closely linked to this is the notion of undertaking research within the political framework of a large government agency implementing the governmental policy agenda for VET. Issues for us as a VET research centre become more complex given that we are attempting to do evaluative, critical research within our own organisation.

Given such issues, VEAC must also continue to explore what benefits arise from being based within a VET provider and how to meet the challenges and constraints from this context. Most importantly, we need to continue to explore the question of how can we address these in ways that enable our Centre to achieve our strategic goals while meeting the needs of an increasingly complex customer and stakeholder base (which often involve competing interests).

What are the implications for VEAC's current and future directions as a VET research centre?

EVOLVING RESEARCH METHODOLOGIES

We are exploring the boundaries and utility of a range of research approaches from *anecdotal* research to more critical, evaluative and empirically grounded approaches. For example, in some recent research, an NREC-funded project evaluating the contribution of competency based assessment to VET, we have attempted to extend the dimensions of the case study approach, by incorporating a range of methods to triangulate the evaluative data within a particular industry. Data from three 'industry case studies' was then further analysed on the basis of an evaluation model to seek out commonalities, differences, what was working well or not, among CBA users and industry sectors.

We have discussed the value of *collaborative research strategies* which involve VET practitioners in various kinds of action learning contexts, incorporated within the project methodology eg. *VET in Senior Secondary Schools* which combined a number of case studies with process benchmarking methodology. This is in keeping with the Centre's mission to provide action learning opportunities for VET practitioners to undertake/ improve research skills with the broader aim of improving the quality and diversity of VET research and strengthening its research culture.

DISSEMINATION AND UTILISATION STRATEGIES

Research by our Centre into our customers' needs regarding utilisation approaches supports NREC's findings that the 60 page report has a very limited use and audience. While there is still merit in documenting clearly the whole research process and outcomes, there is also a need for more diversity in dissemination products and strategies.

VEAC has developed an upfront focus on end users needs and is actively addressing the diversity of products and dissemination strategies explicitly at the project planning stage. This includes the scope to refine and review our initial assumptions about products and dissemination strategies throughout the life of the project.

Examples include an investigation of the effectiveness of workplace assessment, Assessment Works (1997). Through the conduct of the research it became apparent that its potential users (mainly assessors and trainers/teachers) could benefit from a 'hands-on' product that could provide guidance on developing and implementing workplace assessment (systems). Thus, an Assessment Works Kit was produced, as well as a standard report.

Another earlier example Key Competencies in Industry involved a number of industries and specific enterprises in identifying good practice in the implementation of key competencies in training and assessment in the workplace. Dissemination in this project involved responding to research participant and user feedback throughout the project process and resulted in the production of an enterprise focused booklet, Creating Lifelong Learners in your Workplace, and the conduct of a seminar focusing on the project outcomes and involving key personnel from participant sites as an industry panel to share their experiences with the seminar participants.

VEAC continues to refine and develop more creative ways of seeking and acting upon customer needs, expectations and research priorities. Through this we aim to improve our audiences' accessibility to and use of the outcomes of our research. One model, which we will be building upon in 1999, is the Research Roadshow concept. In 1997, staff from the Centre developed an interactive workshop for TAFE head teachers which was then conducted in almost every TAFE NSW institute. The aim of these workshops was to inform practitioners about a selection of our research and through a problem-solving delivery approach, enable them to apply the research findings to their daily practice. These workshops were very well received and have provided a model for future application.

Our position within a VET culture which favours pragmatism and applied research, allows VEAC considerable opportunity and support to implement and evaluate innovative strategies for dissemination such as those described above.

VEAC PARTNERSHIPS AND LINKAGES

The VET context is dynamic, complex and multifaceted. This contributes to the need for researchers to stop, reflect and, as Boud et al (1998) note, adopt a more strategic, more critical, more evaluative focus. We acknowledge the limited impact current VET research has had on informing (and, indeed, challenging) policy. One clear direction we need to address is that of strengthening our linkages with individuals and agencies in order to facilitate greater consideration of our research outcomes within the policy context of VET.

This notion of VET research having an impact on VET policy, practice and performance was captured in the papers by C. & J Selby Smith and R. McDonald at last year's AVETRA conference (1998). In both papers impact is defined in terms of use and influence. Within this discussion, Selby Smith et al (1998, 33) noted that an emphasis on dissemination alone was insufficient and stressed the importance of strong linkages to the impact of VET research:

Dissemination activities are more easily identifiable , for example when considered in relation to particular research projects; but their effectiveness is enhanced when they operate in the context of a strong web of linkages... To stress the concept of linkages is to be concerned with facilitating the establishment of multiple areas of collaboration between the researchers and users (and other groups), given the multiple pathways through which research can influence policy and practice.....

For VEAC this partly translates into a strengthening and expansion of existing networks which can serve as a forum for critique of current and future VET policy and practice. A recent example is the establishment of the VEAC Strategic Group (VSG) - a forum of key TAFE stakeholders which was implemented in response to internal customer feedback concerning a preference for closer linkages with our Centre. The VSG is designed to enhance collaboration with our key internal partners in areas such as research planning, conduct, dissemination and critique. These type of linkages also open up possibilities in terms of enhancing the skill base and profile of VET research within a VET context such as TAFE. The VSG provides VEAC with extended linkages into areas such as delivery, educational planning, commercial activity, staff training and development and policy.

In addition to these, VEAC recognises the importance of looking at the complexity and diversity of VET and explore linkages which look beyond the immediate education and training cross sectoral partners into related fields such as Human Resources and Industrial Relations.

VET RESEARCH CULTURE

As we have stated in the first section of this paper, a central objective of our Centre has been to enhance the research skills base of VET practitioners and improve the quality and diversity of VET research in TAFE through collaborative research methodologies and forums.

We want to continue this practice - to find ways to:

- promote critical reflection leading to new knowledge and new approaches to VET by policy makers, practitioners and VET researchers.
- improve the quality, diversity and credibility of VET based research.
- help build and support an effective culture of research within VET, particularly within the TAFE sector by demystifying *research* and promoting innovative and effective ways for practitioners to evaluate and explore approaches to learning and assessment.

AVETRA provides us with an ideal forum for debate and exploration concerning what is shaping our identities as VET researchers and in determining what culture of research we want to create. As noted by John McIntyre and Mary Barrett in last year's AVETRA conference proceedings (1998:3):

> Now that AVETRA has been successfully established, perhaps it is time to begin to engage in more critical examination of the emerging research culture, not only in terms of its differences from education at large, but also in terms of its linkages and commonalities.

Conclusion

No organisation can afford to stand still in the current political, economic and cultural climate. VEAC has used the opportunity of the 1999 AVETRA Conference to reflect on how successfully we are currently addressing our customers needs and research agendas. We have also suggested how we might improve our strategies for anticipating and meeting future needs and directions.

Part of moving forward in understanding and improving current VET policy and practice is ensuring that we take the time to critically examine the emerging trends and issues from a body of research (not just our own). We have often evaluated individual project outcomes but less frequently fully explored the connections, complexities and issues stemming from a body of VET research with the aim of generating new knowledge and understandings and creating forums for further critique.

The theme of AVETRA's 1999 conference, Quality and Diversity In VET Research, was timely for us to engage in further exploration of the factors shaping VET's research effort, agenda and culture.

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INDUSTRY LEARNING: TOWARD A FRAMEWORK FOR FUTURE RESEARCH AGENDAS

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Industry learning is a concept which arose from a scoping study of industry learning priorities conducted by the Centre for Research and Learning in Regional Australia. This paper will address what industry stakeholders (national peak industry bodies, unions and Industry Training Advisory Boards) perceive their learning priorities to be, given the challenges and changes facing the participating industries. Assisting industries to grow and thrive is critical for all industry, but particularly so for rural and regional Australia. Our research indicated that industry learning is a potentially important factor in understanding about industry development and strengthening knowledge sharing within and across industries. The purpose of the paper will be to address the questions of better understanding industry learning and its implications for future policy direction.

Introduction

A changing local and global environment is leading to enormous challenges for individuals, groups, organisations, industries and communities. Of particular concern to us at the Centre for Research and Learning in Regional Australia (CRLRA) is to learn what these changes mean for rural and regional Australia, especially within the context of the changing nature of work and work organisation (Bound & Owen 1998). This paper will report research in progress into what peak industry bodies perceive their industry's learning needs are, given the challenges and changes facing those industries, with a particular emphasis on regional Australia. It will do so by (i) defining some of the key terms used in the paper; (ii) outlining the findings of an audit conducted by the Centre into industry learning priorities; and (iii) developing a framework for investigating the notion of industry learning, having linked it to the literature on learning. The introduction to this paper will outline some research undertaken at the Centre, and the second part of the paper will advance a framework for considering industry learning that, we hope, will assist part of Australian industries to better respond and manage in time of change.

What do we mean in this context by the terms "industry", "peak industry bodies" and "learning"? Authorities such as the Australian Bureau of Statistics (ABS) define industry as "groupings of businesses which carry out similar economic activities" (ABS 1993 2) such as the retail or construction industry. In this paper, industry peak bodies are not simply "businesses", but also include organisations interested in advancing businesses involved in similar economic activities. Industry peak bodies therefore refers to interest groups, comprising employer bodies, unions, Industry Training Advisory Boards (ITABs), professional groups and others. Unions, employer bodies and ITABs have now been operating in a tripartite arrangement for close to a decade, with the industry ITAB representing government, and acting in a coordinating role.

This paper explores the nature of relationships between these three peak industry bodies. Our contention is that industry learning is a process involving effective communication patterns and information flow/knowledge creation between the peak bodies, resulting in optimal working relationships. As a result, industry learning increases industry's capacity to respond and indeed to be "interactive" in a world of rapid change. The term interactive means, the seeking of 'self-development' and realisation and increasing the ability to be in better control of one's own destiny. This term comes from Ackoff's management strategies (cited in Landau 1972 636) and in this paper is applied to the inter-relationships between the peak industry bodies discussed above. Learning at the structural, strategic and cultural levels within and between peak bodies, is necessary to develop the capacity to adjust to ongoing change. For industry to become increasingly responsive and interactive, learning at all these levels needs to occur, and in order for this to occur, understanding of the context, or environment in which industry is operating is necessary. The potential for tension between these multifaceted groupings which comprise peak industry bodies and opportunities for sharing of knowledge and influencing decisions, is considerable.

The research on which this paper is based was undertaken by the Centre to identify the perceptions of industry bodies about the:

- changes occurring within the industry
- the challenges ahead for the particular industry sector; including
- what do these changes and challenges mean for rural and regional Australia.

The research was undertaken through a telephone survey early in 1998 of peak employer organisations, unions, and Industry Training Advisory Boards (ITABs) (n=23) across a range of industries. Industry sectors included: Construction, Communications, Education, Health and Community Services, Mining and Manufacturing, Retail, Tourism, and Utilities. The interview questions were designed to provide contextual information about the industry body being interviewed; to identify the challenges and changes facing that industry and the representative respondent's view of the future, perceived levels of satisfaction with current training arrangements, as well as the learning implications at three levels: individual, organisational and industry. Summarised here are those comments in relation to: changes and challenges; levels of satisfaction and future needs.

Changes and challenges

Not surprisingly, the industry bodies nominated changes such as globalisation, an increased competitive environment, changing market trends and changing structures of the labour market as having had significant effects on their industry overall. The majority of industries surveyed stated that it is more difficult to attract specialists or professionals to work in rural and regional Australia. Changes in labour market structure also present particular challenges for industries in general, and rural and regional Australia in particular.

Outsourcing and contracting out were leading to increasing numbers of small businesses and were common features of the changing labour market across all industries. This has implications for the national training framework. Changes in the nature of work and work organisations are also leading to individuals and groups requiring new skills to undertake short-term work (for e.g., that found through the tendering process) including the capacity to be able to work within loosely coupled strategic alliances; communities of practice and continuous learning are necessary to support this trend.

Levels of satisfaction with current training arrangements

In general, respondents were satisfied with current training arrangements, although all respondents reported a sense of frustration at the constant changes occurring to accredited training arrangements — an often cited example being the introduction of training packages. Respondents also reported considerable frustration in coping with the constant changes, before "the dust had settled" from a previous change. Regional Australia's access to training was reported to be limited and difficult, and keeping skills available to rural Australia was regarded as critical.

Assessment was also a matter of concern for a number of respondents. The perceptions was that industry understands competency standards very well, the issue is getting people to take up the training. Differing views were offered about where control for the assessment process should reside. On the one hand, there were calls for assessment to be put (back) in the hands of industry, and on the other the claim that industry (or employers) are not the best qualified to make assessments. As one respondent noted "we need standards applied universally to on-the-job training to ensure moderation of assessment".

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Future needs

Some respondents believed that their particular industry was "too insular", in other cases that the industry needed to become "more professional" or (to) "develop a common view" of the industry. In relation to the latter point there appeared to be significant differences between some industry sectors and this led us to develop the notion of "industry learning". We claim that industry learning is a potentially important factor in strengthening knowledge sharing, integration and creation and thus assisting industries to develop innovative approaches to future challenges. We have developed the notion of industry learning from learning theory, as outlined below.

Industry Learning

In this part of the paper we will develop a framework for investigating the effectiveness of industry learning (i.e., information flow and knowledge creation within and between the three peak industry bodies mentioned above: employer bodies; unions and ITABs). The framework is based on key ideas from a variety of learning theories and these include organisational learning (e.g., Coopey, 1995; Easterby-Smith, 1997; Fiol, 1985; Hendry, 1996; Senge, 1994; Shrivastava, 1983; Watkins, 1993) and socio-cultural perspectives (e.g., Billett, 1996, 1998; Lave, 1996; Resnick, Levine and Teasley, 1993) . The organisational learning literature describes learning as a collective experience through which there is shared interpretation and integration of knowledge (Leymann 1989). It is our contention that information flow is critical to the opportunities provided for the shared interpretation and integration of knowledge. A socio-cultural perspective (e.g., Lave 1996 8) informs us that knowledge is always undergoing construction and transformation/change (which we also describe as knowledge creation) and this is what constitutes learning. Knowledge creation then — and thus the potential for innovation — is an important aspect of learning. Where there is good information flow and knowledge creation this increases the capacity to respond effectively and to be integrative. Both the organisational learning and socio-cultural learning literature provides other useful notions that support the idea of information flow; communicative infrastructures and the role of culture and power. These themes include:

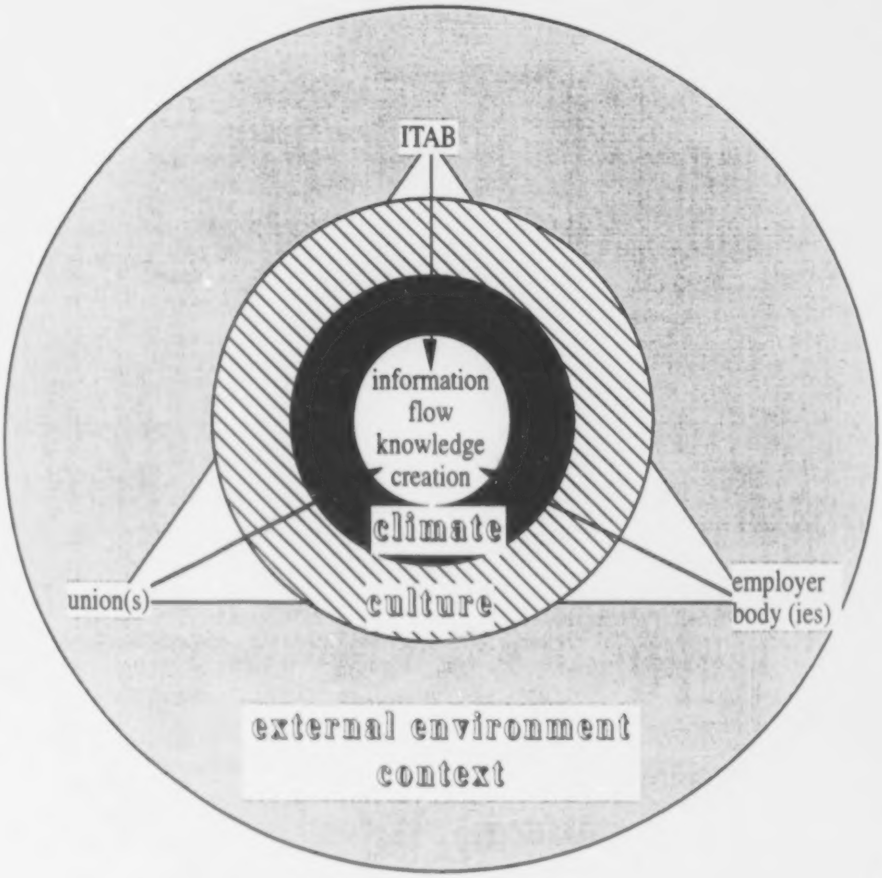
- shared norms and values can enhance or inhibit learning (Dodgson, 1991; Easterby-Smith 1997)
- as situations change the ability to "unlearn' or discard obsolete knowledge is important in being able to move on (Hedberg 1981)
- learning is embedded within particular contexts and situations (Billett, 1996, 1998; Engestrom 1996; Lave, 1996);
- knowledge (meaning skills, understandings and attitudes) is shared widely and remembered through a range of strategies which enhance organisational memory (Owen 1998)
- learning and knowing is not the product of a single mind but is distributed or "stretched over" individuals, other persons and the environment (e.g., through the use of artefacts such as notational systems, tools, policies) (Engestrom, 1996)
- the distribution of power and politicking plays an important role in what is learned, and how it is learned (Coopey, 1995; Leymann 1989).

One of the key features of learning in groups is that of climate and culture (e.g., Brookfield, 1987; Tennant & Pogson, 1994). Learning is also a contested, socially situated activity (e.g., Lave, 1996). Hence our contention that learning at industry level is affected by the climate; the culture created by the by peak industry bodies working together and this in turn is affected by the climate and culture each individual brings to the table as experienced in their own organisation. Climate and culture are also influenced by the external environment or context in which the industry and each of the peak bodies is operating.

Shared norms and values, are an aspect of culture, which develop shared understandings. It is these norms and values which are used by members of the organisation, to justify decisions and behaviour. Just as there are often many cultures within an organisation, so there is likely to be a variety of cultures at industry level. Culture and the distribution of power will impact on the extent to which knowledge is shared and the ability to "unlearn".

Capturing a group's culture is a powerful means of exercising power and control. Owen & Williamson (1994) explain that critical theorists argue that capturing a group's culture and embedding that culture within certain structures provides a means of control through ideological hegemony. The question is, what are these structures — formal and informal — and in what ways is the ideology exhibited through the culture of peak industry groups? The relationship between culture and climate and the environment in which peak industry bodies operate and their relationship to information flow and knowledge creation, is depicted in Figure 1 below.

Figure 1: Industry learning


ITAB
information flow knowledge creation
climate
culture
union(s)
employer body (ies)
external environment context

Climate, culture and environment

The climate created from peak industry bodies working together, as they do through the ITAB structure, is critical to the flow of information and the potential for knowledge creation and innovation. It is well known that communication is enhanced within a climate where there is trust, cohesiveness and openness. In one industry a climate of trust appeared to have emerged from the successful resolution of a crisis between the peak bodies. In this industry, the union walked out of an ITAB meeting, because the employer body would not accept competency based standards (in the words of the union). This conflict was resolved and there is "now not much difference between us (the union) and those employers who understand training". Where peak bodies develop a climate of openness and cohesion, trust will increasingly develop and thus cultures conducive to effective relationships are more likely to develop. However, it needs to be acknowledged that the peak bodies identified in the tripartite arrangements for managing the training agenda also represent different sectoral interests and that conflict between these interests is inevitable. As the peak bodies work together, bringing their own ideologies, policies and understandings of the world, to the one table, they bring with them not only the cultures from their own organisations, but create a culture of their own, through events such as that described above. The story above tells of the successful resolution of a crises, resulting in the development of trust, which in term engenders a culture of problem solving.

Culture is made up of shared values, group identity, symbols, language and history (Louis, 1986). The mining industry, is an example, where the peak bodies bring very different experiences and understandings of the world and distinct cultures of their own to the discussion table. The employer body, describes the culture of the industry as a whole as being "compliant". They also speak of the need for increased consultation. Here language — an aspect of culture — is used to create a particular meaning of the term consultation. This term been co-opted by the employer body from the industrial democracy literature to mean something quite different. As the Weipa dispute illustrated, for example, consultation for this peak body refers to consultation between the individual worker and the employer. The struggle at Weipa was about individual contracts and the desire by the employer to exercise greater control over the work-force, by breaking not only union involvement, but the union itself. In this case the actions and policies of the employer body, are supported by government policy directions. Changes in government industrial relations policy have seen the dismantling of awards, the increase in management power as a result of a more decentralised system of enterprise bargaining (ACIRRT 1999 36) — including the sanctioning of individual contracts. Government industrial relations policy changes in the form of regulation of workplaces has resulted in a situation where internal regulation, by management's own decision making power, has become dominant from a situation where external regulation, by outside institutions, was important (ibid). Knowledge flow, the ways in which knowledge is shared, the degree to which it is shared and what is shared are influenced by the prevailing ideology, and reflected in policy paradigms. Industry learning is situated within a climate, a culture and the external environment in which the industry operates, created by the three peak bodies interacting together (see Figure 1). Where one party's very existence is threatened, it must inevitably lead to conflict and mistrust. Information flow and knowledge creation often result from conflict. However, fundamental conflict of this nature, is likely to lead to a culture and climate of mistrust which in turn, we would speculate, would lead to a focus on tactical issues at the expense of the industry's ability to be responsive and integrative in relation to future challenges.

Another aspect of culture, that of group identity, is illustrated from our data in relation to the construction industry. In this case, it is perceptions external to the industry which have some importance. One respondent reported that "the culture of the industry is seen as [having a] poor public image in terms of industrial relations, adversarial and male dominated ...". The affect of such a poor public image on the nature of responses to issues and problems potentially means the industry becomes inward looking, rather than outward looking. The peak bodies of this industry spoke of the potential of the industry and the need to address issues within the industry before moving forward. The potential for change — learning — requires a range of different strategies when the industry is inwardly focussed. On the other hand the retail and tourism industries describe themselves as "vibrant" and "responsive", displaying an outward looking direction. These industries shared a common sense of direction with all peak bodies — unions, ITAB and employer body — speaking of the "aim to achieve world best practice". These industries appear to be examples where there is a culture, and a climate which encourages information flow and the integration of knowledge. Questions about the dominant hegemony and the power relations remain to be explored. Climate, culture and context then, are influenced and created by the history, the language, symbols and sense of identity of those involved in the organisation and of the organisation itself.

Institutions and their inter-relationships do not work in isolation and are influenced by their external environment, or broader macro contexts in which the industry is situated. The macro context includes many of those challenges identified by peak bodies in the research: globalisation, government policies, labour market changes; environmental change; public opinion and so on. The external environment, or context, has an impact on the relationships between and within peak industry bodies. These influences potentially set up tensions within and between the peak bodies, impacting on the flow of information and potential for knowledge creation and innovation (see Figure 1). The nature of the external environment, sets up both common and different problems and issues within and across industries.

Our data provides a number of examples of the impact of the external environment on industry focus. For example, in the construction industry labour market organisation was an issue. In the construction industry, the dominant form of labour market organisation is contracting out. While this arrangement has historically been important for this industry, in recent years contracting out has taken on new dimensions. Historically there used to be an ad hoc relationship between government and the construction industry. Prior to the extensive privatisation of many government departments, sections and agencies many of the government's skilled workforce would 'leak' into the private sector, which lapped up an already skilled workforce. Since the implementation of government policy to privatise, training levels in this industry have fallen dramatically. In turn, this has produced tension within the industry in relation to the direction for training. According to some of our respondents, even the trans/multi-national firms employ only a handful of staff on each building site; everything is contracted out. As a result there are a plethora of contractors delivering specialised services (e.g. concreting). Many of these contractors want the industry to deliver training which is specialised in nature; and are not in position to offer apprenticeships which deliver multi-skilled personnel, despite the fact that broad-banding (policy since the 1980s) has existed for many years in the industry. This debate between specialisations and multi-skilling is of concern to the peak industry bodies in this industry. The quotes below from two of the peak bodies illustrate this.

> The industry is moving to multi-skilling, yet many companies want to work with , for example, just concreting, this is their sole role and set of skills. The sub-contracting nature of the industry reinforces traditional work practices. ... The major companies employ only a handful of people, the rest are sub-contracted. This is detrimental to the industry, and especially to training and providing the industry with skilled labour (construction industry).
>
> There is a tension between multi skilling and specialisation. The subcontracting structure of the building industry supports specialisations, however, exports and the broader view supports multi-skilling (construction industry).

The construction industry story provides us with an example of a history of practice which affects the nature of response to both internal and external environments. For the construction industry the dominant form of labour market organisation influences the direction and indeed the options for response to future directions. Within this industry as in most industries different interests lead to conflict. Dissonance, created by conflict, can act as a driving force for change and learning (Tennant & Pogson 1991). However conflict can also act as an impediment to change and hence to learning (Hedberg 1981).

Policy and industry learning

According to Stone,

> The project of making public policy rests on three pillars: a model of reasoning, a model of society, and a model of policy making. ... Both policy and thinking about policy are produced in political communities (Stone 1997 9-10).

The prevailing ideology and the policy which reflect it, are important to the concept of industry learning because policy is important in shaping the structures which determine the flow of information. It is important in determining what information is shared, what the models and structures are which people use to address and think through issues and thus the potential for innovation and the nature of innovation. Policy formation is important in tripartite processes, and produces outcomes critical to the relationships between all industry bodies.

Ideology and labour market arrangements are just two examples of context influencing future directions for industries and therefore, have implications for policy. The nature of the debate about future direction for an industry is influenced by the flow of information and the knowledge created as a result of information flow, interpretation and integration of knowledge. Debates on which direction to take are alive within most industries. In the manufacturing industry for example, both employer bodies and unions are calling for a change in direction from that being taken by much of government economic and industry policy. Recent reports from peak employer bodies reflect the directions called for 13 years ago by the ACTU: the need to take the high-value-added road through tripartite arrangements which would address regional needs and be reflected in an objective for full employment (ACTU/TDC 1987 73). This is endorsed by The Metal Trades Industry Association (MTIA), in its 1997 report *Make or Break* which states that Australia should be securing investment in high-value-added industries generating high quality jobs. The Australian Manufacturing Workers Union (AMWU), in *Rebuilding Australia*, calls for a National Economic Development Strategy, which recognises the need to strengthen our "tradeables sector", particularly manufacturing. Such calls for a change in direction are also being made by peak bodies representing sectoral interests across industries. The Australian Business Foundation (ABF) recommends that 'Governments should shift their policy emphasis from cost minimisation per se towards innovation and technology development strategies" (ABF 1997 10-11). In its report the ABF report emphasises the need for innovation and knowledge generation. Innovation, states the ABF, drives the growth of nations. These are examples of peak bodies emphasising the importance of knowledge generation and changes, and thus of learning through the development and implementation of policy directions.

The role of ITABs?

ITABs were set up as the government arm for implementing the training reform agenda — as it was then known — which was government policy for implementing the policy shift towards becoming a "clever county". Potentially ITABs have a considerable role to play in the development of effective climate and culture for learning. The role of the ITABs is widely reported as "to act as a linking device between industry and government" and to "improve training arrangements for their industry sectors" (Fitzpatrick 1997 6). The different perceptions amongst ITABs of their role offers some interesting material to explore. Some ITABs describe their role as something greater than implementing the Government agenda: it "comes back to what industry wants us to do" (Wooden 1997 17). In the construction industry, for example, where there was conflict between keeping specialisations or moving wholeheartedly towards multi-skilling, the ITAB saw its role as creating a culture that was more "professional and cohesive". The role of ITABs is currently under review: a critical time to assess their role in relation to industry learning.

Conclusion

Industry learning is a concept which has much to offer the development of a policy framework which would assist industries to be innovative and integrative in today's rapidly changing world. Industry learning has the potential to tap into the wealth of "talent and ingenuity" (Green 1998 193) which is already within Australian communities, while addressing regional needs through a tripartite arrangement. Industry learning is about information flow and knowledge creation. Because the different sectoral interests of labour and capital are represented by the different peak bodies — unions, employer bodies and government — it is inevitable, that there will be conflict and thus dissonance. Dissonance can enable learning. However, in order to "tap into the wealth of talent and ingenuity" (ibid) which already exists, it is important that all relevant voices are heard. Industry learning can create opportunities for all constituencies to be heard, tapping into existing resources, and so increasing the potential for innovation.

The concept of industry learning requires further development and understanding. The current data from which the concept arose, is limited in a number of ways. Our understanding of industry learning would be enhanced by conducting research:

- from the national level to state and regional levels of peak bodies
- from an industry wide perspective to an industry sector perspective.

We are also aware that the number of those who fall outside the tripartite arrangements is increasing due to the decline in union membership; the increase in contracting-out arrangements and the development of strategic alliances.

As outlined in this paper, the flow of information and knowledge creation — industry learning — is influenced by policy which in turn is influenced by ideological persuasion. Ideological persuasion and a history of experience are examples outlined in this paper, of influences on the creation of climate and is part of the formation of the culture which impedes or enhances industry learning. To advance the project of industry learning would require a cross disciplinary approach and as such offers rich opportunities to feed into policy formulation. We have described one example of the contradictory nature of policy where on the one hand, the establishment of ITABs requires employer bodies and unions to come together with the ITAB playing a coordinating role; and on the other hand, industrial relations policy is bent on destroying one of these parties. The role of ITABs is also currently under review. Given the quite different administrative and industry arrangements of ITABs between national and State levels, this is an opportunity to address impediments to information flow between these levels, thus enhancing the potential for industry learning. Particular attention is required to address the issues of information flow and knowledge creation in regional Australia, where the tyranny of distance contributes to regional needs not being addressed. Green aptly sums up the imperative for the notion of industry learning to come of age:

The real issue is to identify and develop the competitive advantage that already resides in people working in thousands of enterprises across the country, and construct a policy framework to realise the potential wealth of talent and ingenuity. This requires arrangements not only to support the involvement of employees and unions in decision-making, but also to co-ordinate the plans and priorities of enterprises through a sector-based industry policy and, just as importantly, to accommodate the specific needs of Australia's regions. (Green 1998 193)

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WHAT IS MISSING FROM INNOVATIVE PRACTICE IN VET?

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Introduction

Among ANTA's Best Practice Awards for 1998 is a training program that has been documented and published as *Opening Doors: Enterprise Based Training in Action,* (Virgona, Sefton, Waterhouse & Marshall, 1998). In addition to the initial case study text is a video and a professional development kit. The kit is intended for use in programs that focus on the initial and continuing professional education of VET practitioners. As an educator, teaching within post graduate AVET courses, these materials are a very important and useful resource. In the first instance they provide a wealth of information and first hand description of enterprise based training. Secondly, they provide a valuable example of practitioner research. Thirdly, they go some of the way in describing the complexity of the interaction that occurs between context and practice.

Opening Doors stands as an exemplar of innovative practice within the VET sector that has been developed by enterprise based vocational educators. Significantly, these practitioners are generally considered to be amongst the best in the country. In rolling out descriptors for this program it stands as an example of contextualised and customised, integrated and holistic training. As such it is celebrated and promoted as worthy of wider emulation and obviously becomes the subject of further and on going analysis.

The purpose of this paper is to consider how these materials might be used within a post graduate program that focuses on Adult and Vocational Education and Training, (AVET). Teaching within a university program is in many ways working within a privileged space. It is privileged in the sense that there is a greater degree of autonomy and access to resources that are not necessarily found in other educational sectors. However this autonomy and relative freedom for personal decision making in program content and focus has led some academics to make claims for emancipatory practice which have been criticised by others as being ungrounded and unrealistic. In response to this, others especially those working from postmodernist and poststructuralist frameworks have called for more modest claims for educational practice, (Richard Edwards 1997). Likewise, Jennifer Gore (1998) has suggested that as well as identifying and theorising possibilities for critical practice, a dual agenda is needed to overtly consider the limitations. She beliefs that it is very important to realise what is possible, in a given context, at a particular time.

How might *Opening Doors* be used within AVET programs?

Opening Doors is an innovative enterprise based training program for Operator and Production level workers. As such it provides many possibilities and its own 'multiple tales for training', (Peter Waterhouse 1996). How then is *Opening Doors* to be contextualised within post graduate AVET program? It is suggested that these materials provide AVET practitioners with data that enables them to begin to look at the opportunities and constraints that surround enterprise based training; what constitutes innovative and 'educational effectiveness' within the VET sector, and even to begin to examine the nature of VET as a sector of education. In conjunction with data from similar publications of earlier programs it enables a comprehensive review of the evolution of Operator and Production level training programs.

The next section of this paper provides a very brief description of three enterprise based training programs for Operator and Production workers. The first is called *Triform Training,* and is drawn from the Food Processing industry. This was part of a pilot study to implement a module from the then newly developed national certificate, (NFITC 1993). The second example is a set of programs developed and implemented as part of a model of integrated training in the vehicle manufacturing industry. These have been published as *Breathing Life into Training,* (Sefton, Waterhouse and Deakin 1994). The third program is *Opening Doors,* (Virgona, Sefton, Waterhouse and Marshall 1998). While *Triform Training* and *Breathing Life* *into Training* are predecessors to *Opening Doors, Breathing Life into Training* is the direct predecessor.

It is assumed that an aim of post-graduate programs in AVET should be encouraging what Stephen Brookfield has described as 'critically reflective teachers'. Brookfield (1995: 8) explains,

> reflection becomes critical when it has two distinctive purposes. The first is to understand how considerations of power undergird, frame, and distort educational processes and interactions. The second is to question assumptions and practices that seem to make our teaching lives easier but actually work against our own best long-term interests.

Given this aim, a two tiered framework is suggested for reviewing these programs. The first tier is directly derived from these exemplary innovative programs. This framework is intended to show what constitutes educational effectiveness in this sector. However it is argued that this framework alone provides only a technicist approach to instruction. Subsequently this leads to the second tier of the framework aimed at gaining an understanding of the social vision and politics encapsulated by the programs. This is aligned to some of the more critical adult educators involved with the development of pedagogical praxis and who include the development of 'power awareness' as an intention of their pedagogy, (Shor 1992, 129 and 1993, 32).

Foucault's notion of discourse is important to this review. According to McHoul and Grace (1993, 31) Foucault conceptualised discourse not as language or interaction but as a relatively well bounded area of social knowledge. Therefore, at any point in time it is only possible to write, speak or think about social practices in certain ways and not others. In this way 'a discourse' would be what constrains but also enables writing, speaking and thinking within such boundaries. Ball (1990, 2) describes this form of discourse as embodying meaning and social relationships. 'Meanings . . . . arise not from language but from institutional practices, from power relations. Words and concepts change their meaning and their effects as they are employed within different discourses'. Sara Mills (1997, 17) explains that 'a discourse is something which produces something else, rather than something which exists in and of itself and which can be analysed in isolation'.

Richard Edwards (1997) points out that within such conceptions of discourse, knowledge becomes contingent and situated. This has led to the idea that instead of one positivistic notion of truth their are in fact 'regimes of truth'. Different and competing discourses providing different truths. Chris Weedon (1987, 41) has pointed out that 'Discourses represent political interests and in consequence are constantly vying for status and power'. Some discourses take on the status of representing the common sense view of the world at a particular time. These powerful discourses are called dominant discourses. However as Anita Devos (1998) citing Ball explains, as discourses are constituted by inclusions and exclusions they therefore stand in antagonistic relations to other discourses, other possibilities of meaning, other claims, rights, and positions.

VET, along with specific training programs and even VET practitioners are simultaneously located within dominant and competing discourses. The dominant discourse defining what is included and what excluded is therefore argued to have substantial influence upon training programs. Linda Fore (1998) has shown in her research how the dominant discourse contextualises and subsequently directly impacts upon a program's structure and content.

Program 1
Triform Training and the Certificate of Food Processing

Triform training was a pilot program. It involved monitoring the delivery methods for one module in relation to the teaching approaches appropriate for a group considered to be typical operators and production workers in the food processing industry. Triform training was innovative in that it utilised and combined three different methods of training. Over the course of a week the program involved a group training session, a one on one session and a self paced project. It was also a part of implementing the newly developed national Certificate of Food Processing. This certificate is in many ways a classic

> enactment of important aspects of the Carmichael Report (1992). As such the certificate has both an educational and industrial function.
>
> The Certificate of Food Processing has been designed to have three levels. These corresponded to the ASF levels 1, 2 & 3. The course design requires that learners complete and obtain a set number of points at each of the levels with a point being equivalent to a nominal student contact hour. Successful completion of a competency based module that has a nominal duration of 40 hours equals 40 points and a 20 hour module obtains 20 points. To successfully complete the Certificate (III), learners must obtain credit for 900 points.[1]

The design and content of the second program is different from the first in that it is developed from the specific work practices of the enterprise where the training is to take place. It represents a model of Integrated Training in the vehicle manufacturing industry, (Sefton, 1993; Cooney, 1993; Sefton, Waterhouse and Deakin, 1994; & Deakin, 1995). One significant advance is that the program involves the educational practitioner in the design phase of the curriculum development process.

Program 2
A Model of Integrated Training in Vehicle Manufacturing

> In 1993-94, the National Automotive Language and Literacy Coordination Unit (NALLCU) developed integrated training to implement the Vehicle Industry Certificate (VIC). They reported on implementation in six workplaces across the industry. Each case study involved different strategies as dictated by the needs and expectations of the particular workplaces. These are published in *Breathing Life into Training*. The VIC is an accredited competency based curriculum developed to offer training to operators and production workers in the vehicle and component parts manufacturing industry.
>
> This project was conducted in the vehicle manufacturing sector of the automotive industry at a time of massive restructure and industry change. The need for international competitiveness was well recognised and government plans for the industry included reductions in tariffs and rationalisation of the industry.
>
> The project arose from a proposal that a model of training which integrated key elements of the training, would provide a more effective strategy for addressing not only the literacy and language issues, but also other issues of workplace reform, (Sefton et al: 1994:7). The report clearly places the training within the context of industry restructure and workplace change. In this particular case, this was highly influenced by the Button plan[2], and in a somewhat different direction by aspects of the national training reform agenda. Workplace change is described in the report as being tripartite with support from industry, unions and government, with an agreed agenda reached on the ways in which reform would be introduced. Changes in work practices are also detailed with one example being the move to the Japanese 'lean production system'. The report uses a diagram to illustrate the contextualisation of integrated training with four other areas which it names as the Global Context, Enterprise Strategies and Directions, National Directions & Policies and Union Strategies and Directions, (p. 16).

These first two programs were developed under the auspices of the previous Labor government and their national reform agendas for workplace change and training. As such they show the evolution within a different policy context than the third program. The third program occurred within the policy context of the more conservative coalition and their policies of increased market liberalism. This was also the guiding star of the previous government however it has been even more marked under the coalition. While the seeds were all sown under Labor this has had a significant effect on coalition led changes particularly in industrial relations.

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[1] Brown and Rushbrook (1995, 31) have shown the alignment between the completion of modules with skill based classifications and corresponding pay points.

[2] The Button Plan was an Industry Plan for the automotive industry that was launched by the Minister for Industry John Button in 1984 updated in 1989 and again in 1991. It called for a winding down of tariff protection, an increase in restructuring assistance and a rationalisation of producers.

Program 3
Opening Doors: Enterprise Based Training in Action (The Tickford Project)[3]

> This is an example of an enterprise based training program for shop floor employees at Tickford Vehicle Engineering conducted by Workplace Learning Initiatives. The program identified the key steps in the design and development process used by the company in producing high performance cars. These steps were replicated by the trainees in designing and building billy carts. The program adopted the same team structure, reporting and monitoring procedures that are used in authentic product development teams.
>
> The program was delivered as a unit within the Vehicle Industry Certificate covering almost 50% of the course outcomes. It therefore offers a model by which industry competencies can be accounted for within an integrated, holistic program.
>
> The project was nominated as a demonstration of best practice in educational effectiveness by ANTA. The ANTA funds allowed this private provider to make a video, prepare a professional development kit for industry trainers and write up a full case study.
>
> These materials describe the program and how it was established as an example of an approach to VET which is context based, integrated and responsive to enterprise needs. It discusses the principles that made it successful and identifies features that are transferable to other work locations.
>
> adapted from Crina Virgona's (Abstract) in Framework for Innovation, Australian Competency Research Centre (1998:35)[4]

Jennifer Gore (1993, 6; & 1998, 273) has explained that the notion of pedagogy has two aspects. The first is about instruction while the second is about social vision. Based on this idea the first analytical framework for the review is focused on showing the quality of the instruction or what ANTA calls the 'educational effectiveness'. The second analytical framework concentrates on understanding the political nature and social vision encapsulated by the programs.

The First Tier of the Analytical Framework (Educational Effectiveness & Instruction)

This first analytical framework is used to look at how these programs are considered to be innovative and represent educational effectiveness. From the three programs it is possible to derive characteristics that represent innovative approaches to the design and development of the instruction with respect to enterprise based training programs. However, in some ways these may represent what Michael Collins (1991, 5) has referred to as part of the adult educators obsession with techniques that are aimed at improving the efficiency of learning. Consequently some caution is required in their proclamation as in their own way these may constitute a technicist approach to instruction.

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[3] This program is worthy of further examination as it offers a great deal in the way of complex issues for VET researchers to consider. The 165 page case study, the video and the professional development kit can be ordered through the web site of the private provider, Workplace Learning Initiatives at <http//:www.wli.com.au>

[4] This description of the Tickford Project is directly adapted from the abstract of Crina Virgona's conference paper *Best Practice Project: Opening Doors - enterprise based training in action*, given at and included within the proceedings of *Framework for Innovation*, Australian Competency Research Centre, (1998:35)[4]

With respect to innovative and 'best practice' for educational effectiveness, six key factors are identified.

- ***integrated training*** is used in three different ways. Firstly it can mean the integration of modules, where the learning outcomes of two or more modules are mixed together (ie. integrated) and assessed through the completion of some more holistic task such as a project. Secondly, it can involve the thoughtful integration of work and the on-the-job learning with training and learning done off-the-job. Thirdly, it can refer to the way that training is integrated with workplace change.

- ***embedded English language and literacy*:** This refers to the way that English language and literacy are learnt as needed, in this case within a VET program. This language and literacy learning occurs incidentally and secondary to skill development.

- ***authentic learning,*** involves the worker/learner considering and learning from content derived from their actual work. Consideration of real work situations, practices and issues is the basis of the training. Hence the learning is not simulated or generalised but is instead real, authentic and specific.

- ***situated learning*** refers to the way that the skills, knowledge and attitudes that are learnt are connected with the specific environment, situations and practices where they occur and where the worker/learner encounters them; the learning of embedded knowledge.

- ***customised curriculum*** refers to the way in which educational practitioners re-interpret learning outcomes or competencies so as to fine-tune and align them to the particular situation and environment in which the learners will be working. Educators doing this aspect of curriculum development work must make interpretations and decisions about what the documented competencies will actually mean in relation to where the worker/learners perform their work. . (Lynda Wyse and Kath Brewer-Vinga, 1996: 55- 66, describe an example from the food processing industry).

- ***contextualised curriculum*** takes its meaning from the way that situations and conditions familiar to the experience of the worker/learners are used to contextualise the content of the curriculum. Throughout this paper it is used in two ways, these occur at a macro and micro level. The first refers to the way that the VET sector is located within dominant and competing discourses. The influence of these discourses shaping the structure and the design of programs and their curriculum. At the micro level the term is about the development of an 'indigenous' workplace curriculum or program which is driven by the specific requirements of a specific site and returns to accredited curriculum and pre-specified learning outcomes only as a secondary or final concern.

The Second Tier of the Analytical Framework: (The Politics and Social Vision)

While the impetus for this tier comes from Jennifer Gore (1993, 6; & 1998, 273) it is also aligned to Brookfield's (1995) notion of developing critically reflective teachers. Three concepts are introduced.

Power/Knowledge is a concept instigated by Foucault which recognises the nexus that exists between power and knowledge. Foucault (1980:52) wrote, 'the exercise of power perpetually creates knowledge and, conversely, knowledge constantly induces effects of power'.

Power/Knowledge allows us to examine whose knowledge is privileged and whose is excluded, whose truth and whose world view prevails. These three programs like most other VET programs all have project advisory committees. The membership of these is very similar across the three programs in terms of representation of interests. Typically there are representatives of key employers, union officials, training boards, training providers and even government departments. While *Breathing Life into Training* uses a graphic (p. 16) to show that there are competing workplace reform agendas espoused by key stakeholders, the integrated model is depicted as developing and operating within the common ground - the intersection shared by these agendas. The program publications provide little acknowledgment of adversarial relations between employer representatives and union officials. Norman Fairclough (1992, 92) writes, 'hegemony is about constructing alliances, and integrating rather than simply dominating subordinate classes, through concessions or through ideological means, to win their consent'. Subsequently, it may be possible to describe these programs as representing a unified or 'corporate pedagogy'.

Human Capital Theory: this is a theory which is claimed to operate at two levels. In the first instance it occurs at the level of a group such as an organisation. Under this arrangement the organisation can invest in the development of its human capital by running training programs for its employees. Hence the organisation sees its most valuable asset as its people, or as 'human resources' and seeks an advantage from developing this resource and in adding value to their employees.

The second level at which it operates is that of the individual. Here the individual employee can choose to undertake extra education and training. This is considered to be an investment on their part in the development of their own human capital. For the investment to be realised the education and training must lead to an increased financial return in the form of higher wages. Peter Watkins (1991, 42) notes that human capital theory has come under question from a number of quarters. Nevertheless human capital theory has become an almost taken for granted assumption in justifying participation in vocational education and training programs.

The discourse of training reform is inexplicably tied to a belief in human capital theory. This can be seen where pay points have been negotiated to correspond with completion of sections of training programs. Brown & Rushbrook (1995, 31) have shown an extract from a training agreement within an Enterprise Bargaining Agreement where completion of specified modules are shown to directly correspond to Industrial classifications and rates of pay. This theory is the basis of the industrial and training reforms advocated by the ACTU and is the carrot held out by some employers.

Union officials occupy positions within their unions that are comparable with upper and middle level management within industry. Tom Brambles (1996) in his work on union leadership describes them as occupying a privileged layer of the labour movement. In addition he argues that broking between capital and labour is the reason they exist. As such their interests can sometimes be enshrined within pragmatic and conservative behaviour. Pragmatic in the sense of providing their constituents with access to industrial classifications and pay points as set out in skill based awards and agreements. At the same time though it is also conservative in that learner/workers stay tied and invested to the wage/labour relations of capitalism.

Peter Ewer (1998, 17) has shown how some unions such as the Vehicle Division of the Australian Manufacturing Workers Union (AMWU), which has a majority of its members working as Operators and Production workers, has been able to procure substantial gains under these arrangements. This union has negotiated access to accredited training programs in most of the major car manufacturing plants and a high number of the network of component parts manufacturing. Ewer explains that rather than attempting to instigate a trade equivalence program of approx 960 hours of student contact time, the Vehicle Division opted instead for the VIC, a qualification with nominal contact hours half that of trade programs, but with a pay point of 96% of base trade wages. Thus putting their own spin on the notion of 'strategic unionism'.

Managerial prerogative: the term 'prerogative' means an exclusive right or privilege attached to an office or position. In this case it is the privilege attached to management. In the wage/labour relations of the workplace, the employer is the purchaser of labour. They pay wages to workers in exchange for their ability to do work. As the purchasers they exercise their right to make certain demands and determinations in line with their marketplace power. In industrial relations circles this power has been described as an 'inequality in bargaining power', (Buchanan 1996, 128).

Some policy analysts have already noted that in times of high unemployment, governments look to place excess labour market participants into education and training institutions.

What is more governments need to involve the industrial parties - those directly involved in the wage/labour transaction. This gives the training credibility and turns these parties into powerful allies and advocates of training and education. This is done through involving them in the training processes, fostering their commitment and allowing them to develop ownership of the process.

Significantly, the training programs are all competency based. This is attractive to the industrial parties especially employers as it shows an attempt at building quality assurance into the training system. The achievement of the outcomes as pre-specified by the industrial parties being a means of assuring the quality and of certificating the worker/learner's labour power. This assurance of the quality of the labour power, (the level of skills, knowledge and attitudes) goes some way towards the removal of the uncertainty within the employment contract, in industrial relations this is called 'the inequality of uncertainty', (Buchanan 1996, 128).

Involvement of the industrial parties extends down to specific ownership of the curriculum. This is done by involving representatives of the industrial parties in each level of the reform agendas, in overseeing the development of curriculum, and its implementation within enterprises. By implicating the representatives of the employers and of the unions, governments are able to cut criticism of the training system and of the various programs being implemented. This results in what could be described as 'the corporate capture of curriculum' though in reality it represents more of a willing, handing over of the curriculum to corporate interests.

Conclusion

What this paper shows to be missing from the analysis of innovative VET programs is overt recognition and discussion of the politics. All education is political, (Ira Shor 1993), and all curriculum development has been described as being a manipulative strategy, (Murray Print 1993, 15). Consequently, VET programs set out to provide worker/learners with particular knowledge, skills and attitudes. These knowledge, skills and attitudes are not neutral. Instead they are those that have been identified by the industrial parties and especially the employers as having value within the labour market. They are the skills, knowledge and attitudes which they are prepared to reward and remunerate. In fact they reward only what is in their interests. Contextualised and integrated enterprise based programs go somewhat further in supplying those skills and knowledges which have value in the internal labour market of the specific enterprise in which the worker/learner is employed. It is in this sense that the outcomes of these programs have direct relevance and utility. In fact individual employers have less interest in achieving industry wide competencies instead they care only about meeting the competencies required to do the work in their workplace.

Ira Shor (1992, 143) has raised objections to the subordination of curriculum to business interests when he writes,

> ... curriculum should not be driven by business needs because business policy is not made democratically at the workplace or in society. Business, industry, and the job market are not democratic or public institutions. They are operated hierarchically and privately from the top down. Why should education in a democracy subordinate itself to an undemocratic sector of society?

Yet this subordination rather than being treated as problematic is an ingrained, accepted and defining principle of VET programs.

The three program publications provide a rich array of data and materials for consideration within undergraduate and post-graduate AVET programs. On one level they are ideal for showing the evolution of Operator and Production level training programs within different policy contexts. They show creative approaches to instruction and they begin to show the limitations. On another level they stand as an example of what Dennis Carlson and Michael Apple (1998) call Power/Knowledge/Pedagogy.

A number of important questions arise on the nature and role of training programs in the dissemination and induction of worker/learners into the dominant discourse, (Schied et al 1998). This is especially problematic considering the variation in the outcomes that these discourses of economics, quality, teamwork and 'best practice' have come to mean for working people. It is also interesting to consider how training programs might be encouraging and coopting the active participation of working people to the implementation of lean production. Maybe these are the questions that can be asked within post graduate AVET programs?

Finally, Tom Inglis (1997, 4) explains the difference between empowerment and emancipation, '. . . empowerment involves people developing capacities to act successfully within the existing system and structures of power, while emancipation concerns critically analysing, resisting and challenging structures of power'. Gore (1998) argues that we need to consider the limitations that exist for radical pedagogies and empowerment derived from the institutions and contexts where they occur. It is important to realise that in a sector that cannot even talk openly about politics it stands to reason that the best that can be hoped for are small reforms. For some it may even seem like working in a confined space. In fact to profess more radical approaches within VET immediately identifies those making such claims as unrealistic, positioning them outside the dominant discourse, and able to be excluded as irrelevant.

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RECRUITING FOR RENEWAL? SOCIAL CONTROLS AND SPACES IN THE APPRENTICESHIP TO MATHEMATICS

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This study is concerned with participation in mathematics. What do tertiary mathematics students justifications and concerns about the discipline reflect about the apprenticeship to this practice? I have developed a typology, taken from socio-economics, to incorporate methodologies which extend the focus from individuals to the institutional practice.

Questions about socialisation to the discipline

This is a reflection on recruitment to the profession of mathematician made with the intention of investigating the issue of participation in mathematical thinking beyond school. The socialisation process in school mathematics is successful to the extent that many qualify in mathematics. There remains the problem of transfer of the mathematical skill to everyday applications. Even more of an educational challenge, is the difficulty that people experience in taking part in the organization of our society which is increasingly codified in mathematical ways.

The study has focused on the ways those students who have opted to study higher mathematics, relate to mathematical knowledge. In this paper I describe the way I came to look at the socialisation process. The formal access processes are well documented in course work, but do not tell the story of students' accommodation of the institutional demands place upon them as they negotiate the course, nor how they recognize what is required where these are not obvious. I chose to look for the tensions in that process, which were evident in students' talk about the justifications of their decisions and their concerns (Becker, Geer, Hughes and Strauss, 1961). Might this reveal differences in the women's thinking about mathematics, and would these explain the low rates of women's employment in this academic field?

Participants

The data discussed here was taken from interviews conducted with Third Year Undergraduates (NUInt = 36) and Postgraduates (NPInt = 21) in the mathematics department of a large Australian university. These students were amongst the 89 who had returned questionnaires asking them about their relationship with mathematics, mathematicians and their understandings of the nature of mathematics. The questionnaire was distributed to the whole cohort of Third Year Undergraduates (120) and Postgraduates (72).

Dualist thinking

When designing the questionnaire protocol, I had made use of the label, Dualist, a position that Perry had used in his scheme of tertiary Humanities students' intellectual and ethical development (1970). This was the Dualist thinker who felt that the world could be ordered into right and wrong, and that this was done by an authority external to the individual. It was Authority's business to solve any 'grey' areas into these two categories of right and wrong information. Much mathematical activity is taught in this way, and is associated with an external authority, not necessarily distinguished as the institutions of mathematics by school students. The mathematical knowledge that these institutions have produced is based on the sorts of logical thinking, that itself is inspired by the philosophical position of Dualism. This attributes to the knowledge production, a sort of neutrality, associated with the Mind-Body split, Enlightenment ideals and a Boubakian project to develop the discipline in increasingly abstract ways (Heelan, 1975, Struik, 1981, Gleick, 1987).

Mathematical ways of working, at least in parts of the secondary school curriculum, are characterised by the 'certainties' of mathematics, and indisputable 'facts' (Webber, 1998). There is, generally, little discussion of the possibilities of its uncertainties, perhaps because of time constraints (Skovsmose, 1994). One of the criteria for socialisation into mathematics may be a willingness to accept the 'truths' of the discipline, and to understand later. The interesting question is to know what currently inspires the projects of mathematics, how the institution sustains its authority and how the recruitment process is used to in these.

Protocols

In the questionnaire, I asked a question about 'the certainties of mathematics'. The intention was to signal to students the issue of the reliability of mathematical knowledge, so that those who volunteered to come to an interview, might consider the part that these certainties had played in attracting them to a study of mathematics. I hoped to learn what forms this Dualist thinking took, and how this fitted with the notion of creative thinking and renewal in mathematics. It seemed at once, both essential to mathematical thinking and yet counter-productive to its development. It also seemed that to become a mathematician, it was essential to show one's identification with this way of thinking.

Initial findings

There were few differences in the questionnaire response rates between the men and women at the undergraduate level. I had asked participants to prepare for the interview by thinking of five or six people who had opened up mathematics for them. I was struck by their enthusiasm for the subject, and admiration of lecturers. A count of who these mediators of mathematics were, revealed that Postgraduates (96%) were twice as likely to name a family member as Undergraduates (48%).

Students' relationships with mathematical knowledge forms

STUDENTS' IDENTIFICATION WITH DISCIPLINARY ACTIVITY

Students showed an appreciation of the *organization and resilience of mathematical knowledge*, which distinguished it from other forms of knowledge.

> It was very neat and logical.
> [I like] the fact that its results could not be questioned.
> I like maths because it forms a rigorous basis [for thinking].
> I enjoyed its certainty and rigidity as opposed to say, arts subjects.
> [I liked] the clear way in which it fitted together logically.
> [I liked] the problem solving and rigour.
> [I liked] the disciplined image.

There are several dimensions to the spaces opened up in this mathematical activity. The following excerpts from undergraduate students show how it extends from the personal satisfaction of meeting course requirements, to a way of seeing the world through mathematical lenses. At every point there appears to be a pleasure in the achievement of procedural competence, and delight in being able to act effectively on problems with mathematical tools. Most Undergraduates talked enthusiastically about what could be done with a mathematical orientation.

> F5: 'Elegance and ease with which you can express yourself.'
>
> F21: '[Mathematics] provided a structured conceptual framework that could be used to explore and understand the real world. The applications of the theorems appealed to me enormously.'
>
> M21: 'The way in which it could be used to explain things. Clear way in which it fitted together logically. I enjoyed the subject, and it was interesting. It had a clear and logical basis. Other subjects were _ are more vague.'

M49: 'It is interesting and useful, and essential to an understanding of physics, which is what I want to do. ... The way it explained physical systems.'

Identification of students: F for a female student, and M for a male student followed by their respective number.

They remarked on the nature of working mathematically. These comments point to the challenge and scope students felt rather than the constraints of the discipline.

F4: working mathematically was like
'[working with] crossword puzzle, [being a] detective; here are the clues. What is the answer, [or at least] an answer.'

F10: 'Something challenging; freedom to explore different possibilities.'

F19: 'It's good to gain an understanding of nature. It's also fun. A bit of fun; [I] like the doing of it, even Pure.'

M50: 'Pure, logical, interesting. Good at it; liked it.'

Many, when asked if they liked 'the certainties of mathematics' in questionnaires, responded that they did (Undergraduates: 46%; Postgraduates even more strongly: 58%). One dimension of that certainty is presented by M17.

M17: 'It appeared to have meaning rather than hypothetical assumptions. I always knew where I was at with it. Related to it better than the biological side of science.'

The implication appears to be that meanings are more stable in mathematics and that unlike much scientific thinking, it was not working with hypotheses in the same way.

M26: It was less confusing than physics. It was the least boring.

M31: '[I like] the problem solving and rigour.'

Students were interested in the bounded nature of mathematical space, as a framework within which to work. Their conceptions of this framework was not simply as a set of guidelines.

F7: 'I was very good at it. It was very neat and logical. I enjoyed doing it.'

Lecturers had addressed the issue of 'certainty' at the beginning of the Undergraduate course, and appeared to have reinforced the authority of the mathematical solution, when they communicated their own conviction about the validity of the mathematics, to this student.

F14: 'I liked the first year courses since they explained the reason behind all the maths you so far took as "truths". ... Challenging to get an answer, and then [be] able to know it was right.'

RECOGNIZING STUDENTS' COUNTER-NORMATIVE POSITIONS

These are socialised views, conforming to the projects of mathematics as they are widely conceived, rather than questioning them. Was there evidence of a counter-normative stance, one communicating the change processes that are under way in that department? What indications do students have of the thinking of mathematicians at a time when knowledge productions are undergoing great changes (Gibbons, Limoges, Nowotny, Schwartzman, Scott, and Trow, 1994)? Is mathematics immune from all this change? The historiographers of mathematics (Mehrtens, Bos, and Schneider, 1981) and sociologists of scientific knowledge (Barnes, Bloor, and Henry, 1996; Kuhn, 1970; Restivo, 1992) believe that it is not. What challenges are there to the existing patterns of normalisation from students? Do those students who question drop out earlier in the process, or learn to withhold their opinions in the processes of recruitment, while sustaining personal beliefs about the possibilities that mathematics offers?

In the following examples of two women's approaches to the course, it is apparent that my earlier plan just to explore the relationship between individuals and the knowledge forms of mathematics, in isolation from its institutional contexts, was inadequate. In the second example, it is apparent that for a student to dwell only on the aesthetics of mathematics, however inspirational these were, and to neglect the dynamic of the political activity in its institutions was a path to isolation rather than membership of the profession.

These two Undergraduates women who appeared to be equally strongly drawn to mathematics, provided an insight to the difficulties of identifying what is needed to become a mathematician. They presented a sharp contrast in approach to accessing the institution.

Sophia had set about learning and demonstrating a technical competence, which included being able to manipulate three-dimensional shapes in her head, and learning to use the specific terminologies associated with particular topics. She tended to work alone, but to ask questions of tutors and, when more sure of her understanding, of lecturers too. She worked with the idea that she should demonstrate her competence. Learning how to do this, she believed, was a key part of her survival in the apprenticeship.

Myra was engaged in working intuitively and in producing her own solutions. Her debate about mathematics was with friends rather than lecturers in the department, and she was perhaps more attracted to the beauty of the solutions than many of the Undergraduates, who seemed more dependent on lecturers. She was conscious of working differently, in what she called, 'unconventional ways.' She had nevertheless been shocked at having an assignment, using own solutions rejected, without comment from the lecturer, apart from a series of zeros on the work.

This was clearly an instance of reining in a student's activity, and probably disqualifying her from any chance of a scholarship to study in the Fourth Year. The space in which she could explore mathematics was limited by this 'economy' in the institutional practice. It could be justified as weeding out those who do not conform.

Her 'unconventional' approach invites two distinct responses from a researcher. One comes from a psychological position, which treats non-conformity as deviant. If her behaviour is viewed in this Durkheimian sense, her behaviour is a pathological one, to be corrected. The other is a sociological one, which considers that there is conflict in social processes, and that resistance is a component part of these processes. I needed to extend the initial methodological approach to see how individuals' activity has been interpreted sociologically.

Extending the methodological approach

I made use of a typology, taken from socio-economics, devised by Boudon and Bourricaud (1989) to extend methodologies used in school education to incorporate those that deal more appropriately with negotiation of an apprenticeship.

Typology

	Individualistic	**Holistic**
'Rational'	*Type 1* Educational psychology: performance criteria established	*Type 2* Sociological (structuralist) and scientific (positivist) accounts
'Irrational'	*Type 3* Grounded studies: accountable to participants	*Type 4* Deconstructionist accounts Reflective practice

The methodologies grouped on the left hand side of the table, in Types 1 and 3, focus on the individual. Individualistic methodologies tend to attribute agency to individuals, and to assume that the student has the option to participate, as from a more or less level playing field. In between the left and right hand side of the table are those methodologies, which situate the individual within a cultural space, in which participation is regulated by the institution. Those on the right hand side focus on the social or holistic aspects social activity. A study of the controls of the institutions of mathematics belongs on this side.

Type 2, structural accounts of institutional reproduction (Melucci, 1997) and the maintenance of knowledge productions (von Cranach, 1992), although they signal the ways the interests of the institutions are served, only partly explain what happens in a specific apprenticeship. In order to bring together and make visible, both the students' activity and the institution's activity in this apprenticeship, I have drawn on both individualistic and holistic methodologies, and situate the study in the mid-space, asking questions from each.

What were the openings that students saw in mathematics? What could a researcher deduce about the accessible spaces of working mathematically at undergraduate and postgraduate level? What was their relationship with institutional controls? And what could be learnt about the nature of socialisation to this profession?

The attribution of the terms Rational and Irrational is arbitrary. Rational activity in becoming a mathematician may look more like Sophia's than Myra's. It is difficult for an outsider to recognize what is the most suitable behaviour to gain access in specific circumstances. There is not one right conception of what it means to become a mathematician. Practitioners within it, take on multiple roles, but membership remains only partial (Lave and Wenger, 1991).

The tension between learning for examinations and having an interest in the mathematics is clear in the explanations of students. What is required of students is clearly linked to the credentialling function of the institution, but the process of becoming a mathematician is less clear.

Undergraduates repeatedly named two characteristics that one had to have to become a mathematician. One was *intelligence* and the other was *interest in mathematics*. The paths to these states remained unexplained. The path to success, they implied, were often contradictory. That you had to *work hard, steadily, and make an effort to understand* what you were listening to, was not in question. However, if you spent too long trying to understand some concept, you might not leave time to learn other important material for the examinations. Several students commented on the department's wastefulness in not acknowledging the ability in other students who had helped them to understand. They believed these had a better understanding than they themselves had, but had somehow not performed as well in the examinations as they had. They remarked on their ability to *learn it all up in three days before the exam*. They knew that what they had learned would quickly be forgotten, unless they could revive it in a later unit of study.

Although Postgraduate women intended to do postdoctoral studies at the same rates as the men, their positive responses to the questionnaire item:

> *I would like to become a mathematician*

were much lower. At Undergraduate level, they had been similar. In order to understand better what is happening in this recruitment process with respect to the low rates of employment of women, I have extended my questions to ask, how does this institution appear to make use of recruits in its renewal process?

Recruitment to projects of mathematics

And how well does the institution serve mathematics in an age of modernity, in which some aspects of disciplinary activity have been challenged (Fraser and Nicholson, 1994, Code, 1993, Addelson, 1993, Dant, 1991, Marcuse, 1968), rather than projects of an earlier age (Polanyi, 1968, Barrow, 1988, Penrose, 1994)? What evidence is there of reflective practice (Bourdieu and Wacquant, 1992) bringing into the arena elements of counter-normative thinking, and sharing these with students?

The question framed in holistic terms requires that consciousness about these projects, their worth and ways of working, be raised. What types of consciousness within the practice of mathematics, are shared with recruits, and what spaces are made accessible in this way? The awareness and what students make of it, do not depend solely on the acquisition of course material, but are held in the wider and immediate cultural community as values and beliefs about the possibilities of and for mathematics.

Many students in the Third Year of the undergraduate course, gave as one of their reasons for continuing in their study of mathematics, a preference for working on problems within a framework. They gave accounts that resonate with popular understandings of what it means to work mathematically, which in themselves merely confirm an image of what it means to *be* mathematical. But when these accounts are put together, and analysed for the characteristics of that *mathematical space*, it is possible to see what types of thinking are valued by students and, indirectly, the mathematical community. They constitute a first hand account of those institutional controls by people considering membership of that institution.

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'DON'T BE TOO POLITE, GIRLS!' A REPORT ON A CRITICAL LITERATURE REVIEW OF WOMEN, WORK AND VET

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1. Introduction

Vocational education and training (VET) has a long history in Australia, as elsewhere. However, the 'official' history of women as active participants in VET and the relationship between women and VET in Australia is an unfolding story, much of which is located in contemporary times.

Under the auspices of the National Centre for Vocational Education Research (NCVER) we conducted in 1998 a critical literature review focussing on the multi-disciplinary, cross sectoral field of 'women and VET'. The extensive report of this work will be published by the NCVER in late 1999. The purpose of this paper is to outline the work and present some of our major findings.

Specifically, the two major aims of the review were:

- to provide material useful to policy makers and practitioners in planning responses appropriate to the nature and scope of women's disadvantage in VET; and
- to provide guidance to researchers and research funding bodies on gaps in the existing research and the direction of possible future research.

The report also serves a related purpose- that of collating a selected body of literature from disparate fields of significance to the focus of 'women and VET' into one bibliography. It is hoped that this bibliography will provide a useful resource for a wider audience with an interest in this field.

2. Approaches, Understandings and Boundaries

Any investigation that focuses on 'women' *per se* runs the risk of being described as essentialist in its approach, especially if it attempts to position *all women* into a unitary category. The category *women* encapsulates many differences between women; it also contains most other groups designated by nomenclature such as equity, disadvantaged, special needs or target populations. Following extensive theorising, lively international debates and ever emerging understandings and practices around concepts of women, gender and difference/s, we found ourselves in the ambiguous position of both ascribing to 'new' feminist knowledges and the need for new forms of politics, while needing to work pragmatically, politically and sensitively with the category *women*- at least in the short term. While this tension is addressed briefly in the report, the limitations inherent in talking about or speaking on behalf of 'women' are acknowledged.

As implied in the wording of the first research aim of this project (see above), women are perceived as disadvantaged. This association of women and disadvantage mirrors the assumptions and ideologies inherent in the equity target-group approach to women that forms the basis for equity policies and practices in VET. For these reasons, consideration of understandings of and approaches to equity and especially equity as it relates to women in

VET are central to the report. Also necessary is consideration of the troubled and interrelated concepts of social justice, equality and equity, albeit briefly.

Within the broad field of 'women and VET', the focus of our work was women as students and potential students in vocational education and training. This excluded both the women who work in VET and the literature relating to women as workers in VET. While accepting this limitation, we acknowledge the significance of the labour, whether paid or unpaid, contributed to VET by so many women, and especially those efforts undertaken primarily to benefit women as VET students.. 'Women as workers in VET' is an area of research in its own right and is worthy of increased investigation.

INVESTIGATING VOCATIONAL EDUCATION AND TRAINING (VET)

Over the past decade, vocational education and training has assumed a pivotal position in national policy interest in Australia. This has been driven by an increasing belief in (and reliance on) the ability of VET to contribute to enhanced economic competitiveness through its contribution to maintaining and developing a skilled workforce. Throughout this period, VET has experienced a continuous and radical reshaping of its activities at all levels. The significance of the period from the promulgation of Australia's National Training Reform Agenda (NTRA) in 1987 until August 1998 has been used to the boundaries of the literature included in the review.

As an area of policy and practices, VET is complex, multi-faceted and ever changing. The boundaries between the school sector and VET are weakening, with the establishment of VET in secondary schools. The boundaries between VET and adult and community education (ACE) are blurring, resulting in attempts to re-articulate definitions of both and investigations into mutuality and differences in provision of VET and/or ACE. Similarly, many VET courses now articulate with or are granted credit or advanced standing in university (higher) education awards in the ongoing pursuit of 'seamless' lifelong education. Given the scope of VET, this study provides a partial and selective analysis of aspects of VET considered especially relevant for women.

When considering issues of gender, it is important to investigate implications of the culture associated with VET, and the mirroring of this culture in workplaces. We note that this has been traditionally a masculinised culture, reflecting the association of VET with trade-related courses, for predominantly male-dominated trades, delivered in technical and further education (TAFE) colleges. The pervasiveness of this culture in workplaces is now more important, given that an increasing amount of workplace learning is recognised formally as VET.

In interrogating the literature relating to women and VET, it is necessary to draw on that relating to work and women's position in the workforce. It is also important to consider the relationship between learning for work (VET); work-related implications and outcomes; patterns of segregation and new challenges in an increasingly globalised world. Popular framings of 'work' are both ideological and deeply gendered. 'Work' is perceived as synonymous with employment.

It is also necessary to consider the significant role that policy plays. What policy approaches are called on? What is framed as a policy 'problem', why and by whom ? What have been the relationships between policy and research and the gender agendas for both? What are the politics of power inherent in policy discourses and the discursive practices of various policy actors? How and where is equity positioned in these events? Who has benefited; who has been marginalised or left out? How have equity advocates and women participated ? Have they had the space and the political voice to actively shape policy, or have women's efforts and interests been directed to responding to policy 'requirements? What are the implications for women ?

THE LITERATURE

Approach

For this review we interpreted 'literature' as written (English language) text. As it was a critical review, the approach we took was analytical rather than descriptive. Key themes and issues were identified, competing views noted and assessed. The literature relevant to the topic is drawn from many different academic disciplines; from both within Australia and overseas; from diverse community groups and organisations including government and non-government organisations. It concerns women from a wide variety of backgrounds who may identify with any number of the equity category groups associated with systemic and policy approaches to VET in Australia. Much of the literature contains comment on the VET system, which in turn is reflected in this critique. Sources were identified through a wide ranging search utilising electronic data bases; selected library collections; bibliographies; other research reports; letters, telephone calls or electronic mail to key organisations, women's networks and groups, individuals both in Australia and elsewhere, and finally the authors' extensive professional and personal collections.

Boundaries

In constructing the bibliography and drawing on the understandings discussed above, we used the following criteria to assist decision making for selection of material deemed appropriate for inclusion:

- the work provides significant information for contextualising VET, work and women
- the work concerns VET, or the intersections of VET with employment, higher education , adult and community education and/or schooling
- the work addresses gender issues directly or indirectly, with the main emphasis on women
- the work explains or illustrates an approach, or approaches to policy
- the work originates in Australia or is relevant to, impacts on or illuminates the Australian context, and
- the work concerns the period 1987-1998, or is important in gaining an understanding of some aspect of this period.

Although most of the works included in the bibliography are published, some unpublished works were included to ensure that important contributions to the literature were not overlooked. We also wanted to include works by community organisations and groups that may not be widely disseminated and some outside the limited range often drawn on by academics and policy makers.

Three factors in particular hindered the identification, collecting and collation of the literature for the bibliography:

- *Hidden Authors* - there is a surprisingly large number of works that fail to indicate an author, or place the name of the author/s where it is difficult to find, making correct attribution and citation of such works problematic. Many such works are produced for committees, by government and non- government organisations and often are outcomes of funded research
- *Hidden or Inaccessible Works* - locating relevant literature, particularly relevant literature outside the limited range used most often by academics and policy advisers, is problematic. Many are not listed in appropriate data bases or located in libraries and are only found by careful scrutinising of reference lists or bibliographies; of internet websites; or especially by word of mouth. In some cases access to a particular work can only be achieved by a considerable financial outlay and so at times was not possible within the limited resources of this study. Much valuable commissioned work (including

research funded by public moneys) is often not widely released or is embargo-ed for various reasons (including controversial findings).

- *Gaps in the Literature* - important gaps have emerged as a result of the search and analysis, along with the implications of such gaps. This factor is discussed further in the report, in relevant sections including areas for future research. While not a 'gap' *per se*, it is also important to acknowledge that much of the history of women and VET in this country is still in the form of undocumented oral histories; that is, there are very many women who are the embodied holders of important local knowledges of a breadth of events, struggles and issues that may never be recorded as 'literature'. There is also a smaller number of women with extensive and in-depth personal and practical knowledge that could inform a national record and interpretation of women and VET in Australia, both prior to and especially for the period since the Kangan Report (1975). It is our sincere hope that some mechanism/s and resources are allocated to documenting this critical history, to ensure that such important knowledges do not become permanently fixed as 'gaps in the literature'.

STRUCTURE OF THE REPORT

The report was compiled into the following four main sections.

Section One - Locating VET- context and controversies

This section locates VET within the wider social, economic and political landscape, which impacts directly on the institutional arrangements and goals that determine VET in this country. Economic reform, social trends and implications of globalisation are discussed, prior to turning attention to the approaches to work utilised in VET. More specifically, the position of women in the workforce is considered, as are enduring patterns of segregation that are intimately connected with approaches to vocational training for women, through VET.

Section Two - At the margins of the narrative: women and the culture and history of VET

This section reviews quantitative and qualitative data on women's participation and experiences within various VET settings including work-based training, ACE and commercial colleges. From this work it draws some conclusions about the dominant (masculine) culture of VET and its impact on women, and goes on to investigate the strength and sources of this culture as a major legacy of the TAFE system and its preceding era of 'technical education'.

Section Three- Women, equity and VET: rhetoric, readings and realities

The task for this section is to investigate the relationships between women as students (or clients) of VET, and VET related approaches to, and understandings of the concept of 'equity'. This is necessary, as women have been approached as a target or equity group within the VET system, rather than designing and implementing a gender inclusive VET system. Given the inter-relationships between VET and the adult and community (ACE) sector, and VET and schools, contemporary trends relating to women and girls in the sectors are discussed briefly, along with implications for VET.

Section Four - Disciplining Differences: policy research findings and gaps

This final section considers approaches to policy, and women- centred strategies that have been undertaken by and within VET. Through mapping the drivers of national policy, with various policy responses, an overview of the systemic approach to women is presented. Finally, major findings are categorised into six clusters, prior to identifying potential research gaps for future work in the area of women and vocational education and training.

3. Major Findings

OVERVIEW OF THE LITERATURE

The literature relating to women and vocational education and training (VET) generated over the last decade is extensive. It is drawn from many different academic disciplines; from both within Australia and from overseas. It includes the work of individuals, research teams, diverse community groups and government and non-government organisations. It concerns women from a wide variety of backgrounds.

The literature reviewed both forms and indicates a substantial body of knowledge in relation to women and VET. However, much remains unpublished, obscures authors' names, and is difficult to locate. The difficulties associated with ready access to literature in the latter category limits its potential as a resource for policy-making and strategy planning.

The literature reveals considerable research activity concerning women and VET. It is noted that equity-related research is not accorded the same significance as so-called 'mainstream' research in VET. While it can be argued that equity-related research has resulted in positive impact on localised pedagogical and practice issues for women, there is little evidence of significant policy or structural systemic outcomes. Most equity research is funded from government related sources. Most often, this research:

- is undertaken to inform or support policy decisions and therefore is driven and framed by political and ideological agenda. As such, it has been more re-active than pro-active
- is piecemeal, so that it is difficult to assemble a comprehensive picture of change
- tends to consider women as 'other', while normalising the experiences of men, and
- lacks a perspective of 'advantage' as opposed to 'disadvantage'.

WHAT THE LITERATURE TELLS US ABOUT WOMEN, WORK AND VET

A full understanding of the impact and implications of social and economic change on and for VET would benefit significantly from attention to women, for

> Women's experiences are a mirror to the future. Women experience first hand the extent to which the current institutional framework - including labour market structures and the social infrastructure - has failed to keep pace with the changing technological, economic, social and political realities (OECD 1994, p 13).

Women have clearly articulated what they want from VET. Women's goals recognise both the 'education' and the 'training' aspects of VET and often reflect a lifelong learning focus. As half the population, women are not content with being second-best, but seek acknowledgment as legitimate clients whose needs are considered equal to those of advantaged groups. This means ceasing to make 'arrangements for young men and then making unsatisfactory running repairs to the system to accommodate women and other equity groups' (Connole 1997, p 1).

The business of equity has never been central to the 'real' business of VET. There is little understanding of what equity means at a national level and there is a reluctance among policy-makers to act on recommendations of equity-related research that call for structural or systemic changes that would see equity become a central organising principle within the VET system.

Aggregated participation data for the VET sector indicating that women's participation in VET has improved in the past decade hide many continuing problems including clustering in fields of study and at lower levels, less employer-support for external training, under-representation and low completion rates in apprenticeships in non-traditional areas and lower retention rates in traineeships in group training companies.

These problems, and the stronger preference by women than men for VET courses in the 'personal enrichment stream' are partially explained by qualitative data indicating that women in VET continue to experience a highly gendered culture that fails to take adequate account of the complexity of their lives and experiences and to recognise their commitment to employment. Particularly in non-traditional areas women continue to have to deal with unacceptable and inappropriate behaviour from employers, students and teaching staff. In addition, some of their difficulties have been compounded rather than ameliorated by reforms to and in VET, such as 'flexibility', which disadvantages some women by giving a higher priority to the needs of industries and enterprises. Even in the female-dominated ACE sector, specific strategies to meet the needs of particular groups of women receive limited follow through.

Diminishing commitment to equity in the contemporary marketised VET system will continue to present even greater challenges, including that in an environment increasingly dominated by 'user-pays', women's lower level incomes will inevitably wind back the small participation gains observed.

WHERE TO FROM HERE?

The literature review reveals a consistency in research findings and recommendations that seek structural systemic change in the VET system, including the political will to position equity as a central organising feature. Such an endeavour is increasingly urgent for the development of a dynamic and rigorous VET system able to position itself pro-actively in times of rapid global change. Another necessary feature is that of consistent policy linking VET and other related economic and social policy areas.

Ongoing collaborative and participative effort including that of effective research activities to shape an inclusive VET community and sector might be shaped around seven themes:

Globalisation and Change

The changing nature, organisation and distribution of work; the 'feminisation' of work; inter-relationships between global/local, labour market and vocational education and training implications for women; the 'imperative' of change in VET- a gender analysis; the continuation of enduring patterns of segregation and emerging new divisions; shifts in concepts of knowledges, skills and training for work for women; and the role of the state, and equity for women.

Social, Cultural and Demographic Changes

The implications for and impact on women and VET of changes in the lives of women produced by political and cultural 'homogenisation' ageing of workforces, the marginalisation of youth, changing work/family relationships; and changing patterns and locations of 'class'. The role of VET in creating social capital.

Policies, Politics and VET

Changing shapes of institutions of the state, and implications for women and VET, including 'big picture' research of significance to women; the inter-relationships between other sectors, disparate policies that need connecting (eg industry policy, economic policy, social policies, industrial relations, rural and regions development); policy making processes and outcomes within VET, including analyses that consider issues related to politics, privilege and power. The positioning of equity within VET (as in any of the other categories); and consultation that difference for women.

Marketisation of VET

Regulation/de-regulation, and implications for women/equity groups; the inter-relationships between markets and equity contracts; the implications of national 'market' policies and practices for local practices; feminist/women friendly economics and VET; the relationships between accountability, measurement and equity; policy and practice accountability for women as clients of VET.

Economic and Social Policies and Practices for VET

The role of women in economic and social development; the interplay between paid and unpaid work in the labour force and VET; VET, women and sustainable economic and social growth; compound disadvantage, women and VET; the inter-relations between social, cultural and economic capital, women and VET; women , intellectual capital and VET; and futures for women in and through VET.

Gender Issues in VET

Structural and systemic transformation of the institution of VET to inclusivity rather than exclusivity; a gender analysis of the structures and systems of VET bureaucracies; conceptual/policy frameworks for equity, women and VET; equity, difference/s and public goods in VET; the relationship between advantage and disadvantage; men and women; differences and diversity within VET; shifting to 'equity imperatives' as well as 'economic imperatives'; the shifting interrelationships between masculinities and femininities in VET; the relationships between VET for women and girls in schools, ACE, post-compulsory education and work; and men, masculinities and VET.

Curriculum, Pedagogies and Practices in VET

This continues as a significant area for ongoing women-centred and feminist research, much of which has already established a significant 'baseline' for on-going critical work.

PROPOSALS FOR ACTION

Drawing on our experiences in performing the review, and the emerging findings and understandings, we put forward three proposals for further action:

1. The establishment of a funded and accessible 'mainstream' collection point, archive and clearing house for research that covers the broad area of women and VET.
2. A major research project updating the comprehensive and informative work undertaken by Pocock (1987a,b; 1988, 1992).
3. The establishment of a scheme providing untied research grants for VET operating in a similar fashion to the grants awarded by the Australian Research Council.

NAMING THE REPORT

The most lasting impression that remains with us from this literature review is the enormity of the volume and scope of the work that has been undertaken over the last decade, mainly by women, in the optimism that their work would benefit others through enhanced opportunities and outcomes from vocationally oriented education and training. As this report finds, much of the policy oriented research work has been project based, and in fact designed to 'inform' or support policy implementation, more than to shape, challenge or transform policy . Although the VET system has undergone fundamental changes, the VET approach to 'the women problem' remains problematic. Indeed, it is difficult to establish direct causal links between the variety of VET equity strategies and the number, location and status of women participants in and graduates of VET, and improved women's participation that has eventuated indirectly following wider societal changes.

Despite the efforts of the last decade and beyond, the culture and practices of VET remain masculinised, as do its structures and processes. Women and those with a commitment to equity for women have worked diligently to make the system more inclusive in its approach and equitable in its outcomes. In retrospect, this effort could be framed as 'political housework'(Butler 1997a); as trying to 'change women to fit the system'. It is well time to recognise that women comprise over fifty per cent of the total population; that systems such as VET can no longer afford to consider women as outsiders or 'exotic'. Rather, the political will is required to design and implement systems that serve women as well as they do some men. Being 'polite' has yielded little in the way of fundamental reform for women in VET.

For these reasons, we have used the name of a well known song of women activists and workers - 'Don't be too polite girls' for the title of the report. This is one of the first feminist songs ever written in Australia (Melbourne) and is still one of the most popular.[1] As expressed in the words and through the sentiment of the song, equity is worth fighting for. Despite the time span since the song was written, there is still much to be achieved in the name of a 'fair square deal' for women in and through VET.

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[1] *Don't be too polite girls* is set to the tune of *All among the wool, boys.* Lyrics by Glen Tomasetti. The focus of the song is the struggle for equal pay.

QUALITY AND DIVERSITY IN VET RESEARCH: THE CAPABILITY PERSPECTIVE

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ABSTRACT

This paper presents an argument that the issues surrounding Quality and Diversity in VET Research can benefit from a consideration of what has emerged in the recent three years as the "Capability perspective".

There has been much research and consideration of approaches to Vocational Education and Training here in Australia and in other countries over the past decade based on what has been termed the Competency-based perspective. Research has examined the theory, models, applications and the development and evaluation of a wide range of training packages, modules and materials based in this paradigm. There has been criticism and some reassessment of the approach and the alleged "practical" and "industry led" necessity for this model to dominate.

More recently, an approach which claims to move "beyond competency" has emerged and been propagated and fostered by a national body (The Australian Capability Network). Quite recently some research and further elaboration of the theory, models and positions associated with this perspective has begun to emerge both here in Australia and in the United Kingdom.

This paper traces the development of the Capability perspective, argues that the theory and models underpinning the most recent research are well grounded and asserts some ideas for the continued development of this paradigm as a means of further emphasis on quality and diversity in VET research in Australia.

Introduction

This paper offers a case for the serious consideration of what has recently emerged as a new perspective on Research, Theory and Practice in the Business, Education and Training areas. The **Capability** perspective is backgrounded against some of the most important research and development influences of the past decade and is "situated" within the VET area as a useful additional perspective through which research can be viewed. More importantly, the Capability perspective, it is argued, offers a grounded, evolving model which rests on a simple triadic representation of an interdependent relationship between Research, Theory and Practice in a holistic and bidirectional manner. The model is not linear, is not a consideration of research on theory-into-practice and it resonates with a number of recent models and paradigms proposed. The paper also offers some examples of applications of the concept in research/theory/practice.

Background: TAFE, VET and Research and Development Influences in the 1990s

The Vocational Education and Training area of the Australian society is a broad, multi-faceted and extensively influential sector. What, in previous generations had been an almost exclusively government dominated sector with Technical College and apprenticeship approaches, has become, in the 1990s, a mix of TAFE, private providers and other sector elements which develop, offer and compete for VET opportunities.

The "Training sector" which also now includes many "in-house" company training branches is, in annual monetary terms "a $5 billion industry". When this is considered alongside the overall expenditure on the Education and Training sector (including schools and higher education) which has been estimated to reach around $26.1 billion per year by 2004-5 due to demographic effects alone and possibly $27.3 billion if additional strategies recommended in the 1995 report "Australia's Workforce 2005" were implemented (DEETYA, 1995), it is apparent that this is *big* business!

Whilst it is not the place in this paper to attempt a detailed overview of the changes and developments in the VET area over the past decade, it is important to background some of the influences as they have affected research and development.

A useful brief tour through the change and development in the VET sector in Australia is offered by Smith and Keating (1997). The dominant aspect of the past decade has been the emergence and popularisation of what has become known as the "Training Reform Agenda", a term frequently applied to the range of policy developments including the establishment of entities such as the National Training Board (NTB) (1990), and its successor, the Australian National Training Authority (ANTA) and the changes they have wrought. At the same time, largely driven by the then Federal Government, there were a series of Reports (Deveson, 1991; Finn, 1991; Mayer, 1993), all of which urged particular change scenarios and followed similar rationales leading to the introduction of Competency-Based Training as a key element. These approaches were part of the reforms within a National Recognition Framework (1992) which sought to establish a set of clear sequential qualifications across the nation. This latter aspect is also well charted and explained in detail in Harris, Guthrie, Hobart and Lundberg (1995).

Interestingly, most of the discussion and almost all of the initial rationale for these changes (or "reforms" as they were touted in more emotive language) was based on assertions that it would make Australia "more competitive" and effective in the workplace. In addition, a good deal of this justification arose from a series of international site visits by "leaders" of industry to where such aspects were being rapidly introduced and adopted (Germany, the United Kingdom and to a lesser extent the USA). Curiously for this time and context, much of the rhetoric surrounding this push for change (or "reform") showed a loose alliance between many officials in the Trade Union sector and others from the Business leader groups.

Discussion, in similar terms, about reform movements, competitive edge rationales and the need for competency-based training was echoing around New Zealand and Canada about the same time (see chapter 2, Harris, Guthrie, Hobart and Lundberg). There was little reported research evidence that Competency-Based Training (hereafter CBT) was able to deliver the efficacy and results touted in these many papers, reports and calls for this needed reform. The idea was seen as timely, the approach was grasped with almost missionary zeal by some and the outcome focus was seen as common sense. The lack of research evidence clearly justifying the approach or demonstrating clear links to the alleged competitive improvements for individual and even national business efforts was not an issue.

Much research, for example, had been completed on Competency-Based Education in the Teacher Education sector in the USA and Australia in the 1970s, but this appears to have been ignored. There was even some assertion at the time that this new version of competence/competency-based work was "different" and broader and therefore not related to the earlier Teacher Education research and development (this was particularly so in the case of the Mayer Committee). The fact that the term, the focus on observable behaviours and the outcome approach was rooted in behaviourist theory and research was, for some, a non-issue and for others was merely sidestepped by stating that the new "broader" competencies "cannot be explained or inculcated through the use of behaviourist learning theories" (p.3, Mayer, 1992). This is the same group which defined competence as "(i)t is about what people can do" (p. 9, Mayer, 1991).

Even in the early days of the so-called "Competency debate", there were a number of protests and reviews which critiqued the concept, its basis and argued for caution (Cairns, 1992; Collins, 1993), but the waves lapped on.

The CBT perspective has tended to dominate the VET sector discussion in the past decade and there have been attempts to extend the concepts' alleged applicability to "the professions" (NOOSR, 1995). Whilst this actually happened in some areas such as Nursing, it was not a raging success across the board and the Universities were particularly sceptical of its applicability (Praetz, 1996; Adey, 1998)

There were some, as mentioned above, who sought to describe the competencies in ways that emphasised the possibility of broader meaning by adding qualifies such as "generic", "key" or "strategic" to the name and asserting that what resulted were in some way a form of basic, broad or even "higher order" competencies. That the theoretical roots were clearly behaviouristic and that the focus therefore **had** to be on explicit performance to keep faith with the originating theory appears to have alluded some proponents of the wider view. One could argue that this was akin to arguing that a carnation was a rose without thorns!

An argument has also been developed more recently that the broader views of the CBT idea can be seen as a more "holistic and integrated" concept which has arisen "through a research methodology that used a variety of methods: expert workshops, observation of performance and interviews" (p. 183, Chappell, Gonczi and Hager, 1995). Whilst this case has some appeal as a middle ground and as a movement towards a somewhat different conceptualisation which **is** based on different methodology and has some research authenticity behind it, there is still a difficulty, I would argue, with the central terminology, the "languaging", and thus, the applicability of the terms.

As will be seen below, this type of mixed methodology has appeal and is a useful paradigm. It has been one of the main aspects utilised in exploring and developing the Capability concept and its applications over the past four years.

Much of the later discussion on CBT, which centred on the perceived need by both critics and advocates of CBT alike, to "add" such things as Values, a future orientation and to somehow cope with the idea of potential ability, led people to re-explore the Capability idea which whilst an old term had little usage in this area prior to 1994 in Australia. This aspect will be returned to later in this paper.

A more recent development in the VET sector has been the emerging interest in this part of the educational enterprise by Universities. The University sector has seen the VET sector as a potential income source and has also encouraged academics to explore aspects via research and course development. The ANTA established a research advisory committee (abolished and reformulated as part of the National Centre for Vocational Education Research (NCVER) in 1997) which set about identifying useful priorities and dispensing research funds to examine those areas across the nation. While the pool of such funds was not large, it facilitated some developments. The funding of various centres and groups at Universities and the development of some TAFE research and development sections has demonstrated that there is an emerging understanding that research is necessary and can be helpful. The emergence in the last few years of the AVETRA is also a further recognition that the VET sector has come to see research more evidently as a significant integral element. There are however, still many aspects and areas where the idea that research is useful and helpful appears to raise doubts.

The recent House of Representatives Report on the role of TAFE and Higher Education in Training and Education (1998), while examining aspects of what is described as "the sometimes uneasy relationship" (p. vi) between Universities and TAFE, says very little about Research in the VET sector. It is significant that what was included pointed out that there was a need for "collaborative research" involving TAFE and the Universities **but**, there was a caveat that " (i)t is important, however, that if TAFE develops a greater research capacity, it does not lose its practical focus" (p.51). This type of limited focus on what research is, what it offers and its relationship to practice and the "concrete" (an unfortunate term quoted in the Report and attributed to Stevenson), reveals a somewhat stereotypic view of research and its benefits. There seems to be an underlying assumption that research and researchers are somehow removed or distant from reality, practicality and "the concrete" as a matter of belief. This smacks of some "big R" research versus "small R" research, with the former being abstract, esoteric and therefore unhelpful and the latter being applied, real and therefore more acceptable. There is almost a fear expressed that more research may take TAFE (and by extension VET) away from its practical and real roots and contribution. Such a case, if that is what is apparently implied in these types of meanderings (however brief and throw away), is specious.

The point behind some of this rhetoric and the attached "warnings" or caveats is however, much more significant. It is not just a case of cynicism nor sinisterism, but rather, such comments expose a narrow view of research, its purposes and possibilities and contributions and an apparent reluctance to engage in careful scrutiny and critique which can be provided by research. Such a view should trouble us all.

Another aspect of the concern for the future of VET research rest on the need for a more diverse set of "informing notions" than is current in the field.

As already briefly mentioned, Vocational Education and Training in Australia in the past decade has moved to a broad adoption of what has become known as the Competency-based perspective. This perspective had generated a lot of debate, some research and much justificatory rhetoric in its support. This perspective has not however, been the only feature of influence or "informing notion" for research in the VET sector.

McIntyre, in a brief, but succinct discussion of research in adult education and training (1995), points out that the range of different perspectives, research paradigms and competing traditions all impact upon the research in the adult education and training area. McIntyre's conclusion is worth quoting in full as it raises significant points of relevance to the core of this paper:

> Another theme of this chapter has therefore been that research needs to do justice to context. Diversity of context makes adult education distinctive, therefore research must develop better ways to understand how learner and setting interact to produce "adult learning". Neither an institutional perspective (the focus of participation studies) nor a learner perspective (the focus of adult learning theory) can give an adequate frame of reference for understanding this interaction. New models for research will need to be found for this task, and they will give more emphasis to analysing the complexities of adult education and learning context (p.133).

Research paradigms and the traditions they have generated and supported have been the stuff of much debate and even dispute (Nate Gage, of Stanford University, wrote a seminal article in the American Education Research Association journal *Educational Researcher*, entitled "Paradigm Wars" which broached the issues of differences between those engaged in empirical research versus ethnographic research).

There are those who adhere to and advocate more empirically-based approaches where "hard data" and statistics are asserted as the bases for "rigour". Others take a more qualitative approach and utilise case studies, interviews and a range of different methods to gather and analyse information. Still others see themselves as central participants in the research, whilst others see narratives as the key. The range and diversity of methods and arguments is wide. Many researchers today feel that the divisions and debates are less than productive and opt for a range of methods, instruments and techniques which are more eclectic or "mixed methodology" approaches. We will also return to this later.

Recently, in the VET sector we have seen not only the CBT conceptualisation as one of the major influences on practice and some related research interests, but also a range of other "informing emphases" which have led to influences on the nature and purpose of much of the research in the field. It is not argued that these are separate paradigms per se, but rather dispositions and models.

These have included:

- Action Research/Action Learning
- Situated Learning
- Work-based Learning
- The Learning Organisation
- Lifelong Learning

Each of these notions has led to a whole realm of debate, theory development and research and practical attempts to implement and demonstrate the efficacy of the ideas inherent in the notion. It is significant that all of these emphases or "informing notions" have a central and strong "learning" thread running through the rationale and practice ideas and ideals. That this recent era has been the "learning era" is undeniable and that learning based approaches are central to the further development of societies for the twenty-first century is so evident as to smack of asserting a truism. It may be that this set of informing emphases could be said to all have some home in a "learning paradigm" of research and development.

What is emerging is an emphasis on both methodological diversity and also the beginnings of a wider set of "informing notions" which offer particular theoretical perspectives for research and practice. As will be seen below, this interaction of Research, Theory and Practice as an overt bi-directional set of elements in a more holistic overview is important to reassert at this stage of the field's development to enhance progress.

This paper sets out to argue that the Quality and Diversity of research in VET can benefit from a consideration of what has emerged in recent years as the "Capability perspective". The paper suggests that such a theory-based concept and the range of research approaches it is beginning to generate adds to the possible diversity of approaches, schemas and informing rubrics within the VET field and thus increases the diversity of research traditions. In addition, because of its grounded basis, the ability of research based on this perspective to contribute to quality processes and outcomes in practice is an additional strength. It would be too pretentious to argue that such a perspective even approaches a paradigm at this stage, but it does cut across the learning paradigm and is well situated within the qualitative and holistic paradigms of research and theory.

Paradigmatic Approaches and Needs

Paradigms of research and discussion about methodologies have figured extensively in many recent conferences and journals. One recent review article, enticingly titled "*Caught in the Paradigm Gap: Qualitative Researchers' Lived Experience and the Politics of Epistemology*" (Miller, Nelson and Moore, 1998), discussed the range of conflicts and interpretations placed on educational research by practitioners and their contexts. They concluded that:

> ...our field needs to become more reflective about practice and to develop a more deeply democratic discourse for research, one grounded in principles of academic freedom and supported by the conviction that diversity engenders strength (p377).

Miller, Nelson and Moore (1998) go on to discuss the way the language used to describe and attempt to differentiate among the various ideas, methodologies and practices of researchers can add to the confusion and difficulties. They state "differences in theory and practice distinguish these emerging research perspectives, but terminologies are not always consistently used in paradigms that are still in formative stages (p.378). The significance of language as a means of developing and applying terms which aim for more precision and refinement is an important point.

The case being developed in this paper is that there is a paradigmatic necessity for what have frequently been perceived as somewhat independent elements of Theory, Research and Practice to be seen clearly and overtly, to be necessarily **interdependent** elements in any analysis and discussion of the VET research area. By emphasising the interdependence the essence of a more holistic and interactive view of these elements as explicit concerns which all need to be considered, emerges as a necessary perspective.

Whilst this is a simple point, it appears to often slip off the agenda in discussions about research methods and paradigms. To return to simple, almost self-evident truths is often a very useful thing to do. Obfuscation, convolution, grandiloquence and sheer linguistic gymnastics does nothing for progress. Much discussion centred early in the so called debate on the dichotomy between *quantitative* and *qualitative* research. This was largely a matter of methodology, but more recently the latter term has been used to cover a very broad range of methods and techniques. Also recently, the terms *constructivist* and *interpretivist* have come into some use and as Miller, Nelson and Moore remind us, today there is the term *postpositivist*, which covers the stance of those researchers who mix qualitative and quantitative methods and strategies. Such dichotomous arguments and searches for difference and contrasts have bedevilled much of the discussion in this domain. The descriptors and the potential paradigms are almost "morphing" while we watch, like some high priced multimedia advertisement. Even the language of the debate can descend into a meaningless quagmire (Cairns, 1997 d) which does not assist clarity.

The tendency to fall into discussions based on simple dichotomies for example has been a cultural one that is traceable to *Cartesian* dualism and this has influenced many models and traditions in Western society , and particularly in the Business and Management field (Nonaka and Takeuchi, 1995). That the East has a different tradition, philosophy and consequential way of constructing "knowledge" where Cartesian dualism is not the dominant model is well expounded by Nonaka and Takeuchi (1995). A good deal of their argument exposes that many previous attempts to transfer the observed post war successes of the regeneration of Japanese business to the West and models based on apparent analyses of that success (including Drucker, Senge and the Resource-based views associated with Prahalad and Hamel) erred in **not** understanding the epistemological differences between Western and Japanese thinking models.

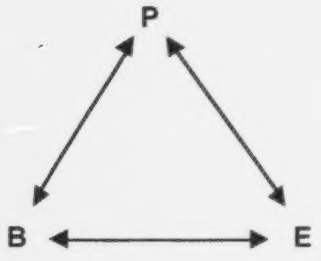
The importance of returning to the key significance of all three interdependent elements, as a necessary informing part of the VET paradigm underpins the argument for both Quality and Diversity needs in the VET sector. While there may be quality programs in practice, quality research in aspects of VET and while some of the theoretical positions informing these practices and research traditions may derive from methodological or implementation paradigms which are quite diverse in nature, it is the necessity for a model which emphasises the interdependence of all three elements which underpins the reality of Quality and Diversity.

In very simple terms, this means that Research without a theoretical perspective and which contributes little to practice, is, in this field, less efficacious. Practice, without a theoretical and research informed basis, is also a "walk in the dark". And, Theory, which ignores practice and leads to no research to test and evaluate its applicability, is vacuous. It is this need for all three elements to be involved, to interact and to be part of the paradigmatic perspective which makes the field of VET somewhat special. It is also probably why the aforementioned House of Representatives Report (1998) argued for the need for any research to not detract from the practical base of TAFE, even if the way this sentiment was expressed was naive and less than carefully thought through.

Figure 1 represents the view of the "interdependent causal structure which involves triadic reciprocal causation" as proposed by Bandura (1997) in his attempt to explain human agency whereby people are both producers and products of social systems. Bandura drew on his Social Cognitive theory to argue that:

> In this transactional view of self and society, internal personal factors in the form of cognitive, affective, and biological events; behavior; and environmental events all operate as interacting determinants that influence one another bidirectionally (p.6).

Figure 1

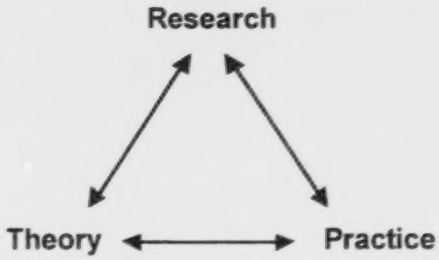


In this representation, B represents behaviour; P, the internal factors in the form of cognitive, affective and biological events: and E, the external environment.

In proposing this triadic model (like the three notes of a chord) rather than a dichotomy or even a trichotomy (two or three distinct aspects) Bandura agues that his "social cognitive theory thus avoids a dualism between individuals and society and between social structure and personal agency" (p.6, 1997).

Figure 2 shows the three elements of Research, Theory and Practice ought also to be modelled in such an interdependent triadic relationship. As with Bandura's model, the three elements in Figure 2 are not necessarily equal. Situations, emphases and other factors in the reality of operation mean that at different times, for different purposes and in different situations, one element may have more emphasis or more weight than the others **but**, all three are significant and involved in an effective quality and diverse system and the interaction is bi-directional. It is a triadic, explicit and overtly interdependent linkage.

Figure 2



Because of the nature of the VET sector, where elements of Work, the sites of practice and therefore research are so varied and yet "situated" in knowledge and practice terms, there is a strong need for careful consideration of perspectives and constructs which can deal with all three elements (Research, Theory and Practice) **and** as well can accommodate three key aspects; the personal, the organisational and the social.

This later aspect relates back to the points made by McIntyre in the quotation above. There is a need for models (in adult learning and in VET research and development) that can describe and account for aspects of individual, organisational and societal interaction and learning. One can infer that more holistic models which offer a synthesis of the various elements and aspects in interdependent interaction is the direction currently being pursued.

The emergence of what has become known as "situated cognition" theory, based in its infancy, on analyses of learning "on the job", is a complimentary and at times elegant exposition of this type of thinking (Lave, 1988). In this model a core concept is that:

> Cognition observed in everyday practice is distributed - stretched over, not divided among - mind, body, activity, and culturally organised settings (p.1).

While a range of studies have begun to explore the implications and applications of this area of theory and there is critique and analysis (Kirshner and Whitson, 1997), there is no doubt that the ideas and implied models for learning involved in this theory are profound and will be very influential. One of the difficulties in this area however, has been coming to grips with the "situated" and "distributed" nature of cognition involved and where the individual's development fits in the relationship (Salomon, 1993).

The models and contention of the advocates of the Capability perspective is that this concept and its application begin to address a number of the ideas expressed so far as needed in models and developments for research in the VET area and perhaps there is promise in taking such a concept further to test this applicability. The remainder of this paper will expand on the concept of Capability and attempt to demonstrate how it has been applied to use the three elements and also to relate to the three aspects mentioned above.

The Capability Perspective: The Model and Research Development

The notion of applying the term , *Capability,* and its implicit definitional elements and aspects to develop and argue for a particularly different perspective on VET research initially begs a few questions.

If the Capability approach is described as a perspective and not as a paradigm, does this signal that the idea and its applications are vague, nebulous and ill defined, or that it is merely another term in the long line of language generation of titles and descriptors?

This initial question was clearly answered and has been the focus of two "search conferences" conducted by the Southern Cross University (one a Byron Bay in 1994 and one in Ballina in 1995). The fledgling Australian Capability Network (founded late 1995) held conferences in 1995 and 1996 where the concept and details of how and where Capability went "beyond competence" was addressed. Further, as part of the "Capable Organisations" ANTARAC project there was considerable development on the topic of defining Capability (Cairns, 1997a). In addition, the International Journal, *Capability,* produced by the Higher Education for Capability centre has frequently added to and developed the concept (Stephenson, 1994; Weaver, 1994; Cairns, 1996) Quite recently, Stephenson and Yorke (1998) have also added further to the definitional clarification and offered examples of Capability in practice.

A further question raised is: "Why bother attempting to embrace another term when Competence, Competency, Competencies, all can be defined in ways to include much of what appears to be the Capability argument?"

The concept of Capability is broad, holistic, but robust and has been well grounded in practice and draws upon Social Cognitive theory. In addition, the concept of Competence is seen as one sub-element of ability in the Capability concept. Competence refers to the ability to perform in the "here and now", that is current observable ability, but Capability also refers to that capacity or potential to do more, in unfamiliar or novel circumstances. The two terms are not opposed. The more holistic nature of the Capability concept and the clear use of the term to signal this difference is seen as a prime reason for furtherance of its application.

Capability has been defined as :

> Capability is the confident and mindful application of both current and potential ability (competence and capacity) and values within varied and changing situations to formulate problems and actively work towards solutions in a self-managed learning process (p.9, Cairns, 1997a).

The essence of this concept is summed up by the description of three key elements, **Ability** (Current Competence and Capacity or Potential), **Self-Efficacy**, and **Shared "appropriate" Values**. In addition, the concept is located within three contextual aspects which are also significant in its operationalisation. These are; Mindful Openness to Change, Learner-Managed Learning and a Problem-Solving Approach.

Based on these elements and the social cognitive traditions of the concept a tentative Capability Learning Model was developed during 1997 by Cairns and Stephenson and has been the basis of discussion and examination over the past two years (Cairns, 1997c; Malloch, Hase and Cairns, 1998). This Model has been aimed at bringing together in a recursive manner, the elements and aspects of the concept and its "knowledge-into action, action-into-knowledge" processes so that the interaction of the theory, practice and research continually informs, modifies and assists the further evolution of the concept. It is envisaged that the Capability Learning Model will evolve and be modified over the next few years as Research, Theory and Practice explicate, critique and verify or refute its applicability, descriptive and predictive power.

One response, worthy of consideration in answer to the question of the "need" for a different term is that the language that we use to describe or label is more powerful as a variable in the process than many practitioners appear to see or believe. Indeed, within the theory area known as *Autopoiesis* (Maturana and Varela, 1980, 1987), the concept of *languaging* (the way language use maintains some, adds new and refines other descriptors) is a key aspect. This idea and the application of autopoiesis theory to strategy and management by way of how it relates to the epistemological aspects of the "knowledge" within an organisation has been a recent significant development (von Krogh, Roos and Slocum, 1996; von Krogh, 1998). Companies as Knowledge creators (Nonaka and Takeuchi, 1995) beyond simply knowledge stores, has emerged from this debate as a different and significant element. Whilst the "knowledge" company notions and the Learning Organisation ideology have received a good deal of publicity and discussion and varied "adoption" (often merely the term is invoked), there has been little exploration of the theory-research-practice links in these areas. That the idea of a Learning Organisation has been much touted but undertheorised is something a few recent scholars have strongly argued (Nonaka and Takeuchi, 1995; Argyris and Schon, 1996; Garavan, 1997; Dovey, 1997).

The term *Capability* offers an alternative, with more holistic scope than competence (however "stretched" in definitional terms), which allows for different language, different emphases and incorporates a capacity to relate to a wider range of theoretical positions and models. It is thus, a **term**, an enabling language unit which offers what Richard Bawden (1997), described as follows:

> *Capability*, like quality, remains an *emergent phenomenon* - forever emerging, forever evolving, but always within an identifiable ethos which characterises its *potential*, while reflecting its *history and traditions*, its *logical structure*, and its *theories of value*, all allowing it a *future* (p.2).

Research and Development completed within the Capability Perspective over the past three years has added to the force of the case that the concept and its derived models offer a further perspective in VET research. A few examples should convey the nature of the process.

In Australia, the Australian Capability Network (ACN) completed a study of a range of organisations (ten) from a wide range of industries across the country to attempt to identify whether there were elements of the theoretical concept present and what these were and to further elaborate on the notion of a "Capable Organisation" (Hase, Cairns and Malloch, 1998). The organisations involved included a number who had explicitly embraced the idea and used the term Capability as their basis for organisational change and learning as well as those who had participated in conferences as case study presenters looking "towards" a Capable Organisation and finally, a small group of others who were identified by repute as demonstrating characteristics similar to Capability in practice which had emerged from the previous conferences as possible characteristics. The findings of this research have been fed back into the models of Capability and the Capable Organisation and have informed changed practice through recommendations for VET and through the development of Professional Development materials for the Process Manufacturing industry through packages for the non-endorsed components for the Rubber, Plastic and Cablemaking and the Chemical, Hydrocarbons and Oil refining Industry Training Advisory Board (ITAB) (Manufacturing Learning Australia, 1998).

In the United Kingdom, two recent projects funded by the RSA Examinations Board have been examining the relationship between the implementation of the National Vocational Qualifications (NVQs), a system of work-place assessed competency-based training approaches, and "corporate capability" (Williams, Cunningham and Stephenson, 1998). In the first study, the "spin-offs", that is the incidental impact of undertaking competency-based training and qualification recognition were part of the main contributions to corporate capability. It was not that undertaking NVQs led to improvements in such Capable attributes as Customer Focus or Quality or Shared Vision, but rather through the opening up of communication, showing more self-confidence because one's competence has been recognised ("officially") and the development of a beginning of a culture of learning that there was progress. This prompted a second study, which is currently under way, where a more detailed examination of a set of cases is attempting to probe what the social milieu of learning involved around NVQ implementation and to propose how such training regimens could be utilised more explicitly to develop and enhance Corporate Capability.

In a different, but nevertheless related application of the Capability perspective, Cairns (1998 a, b; 1999) has taken up the concept and argued for a notion of the "Capable Teacher", that person who is:

> ...able to move beyond basic competence (knowledge and skills) towards a flexibility (coping with present twists and turns) and an adaptability (coping with uncertain futures) in a manner that demonstrates potential and professionalism. The capable teacher - with that blend of high skills and knowledge, wedded to strong self-efficacy beliefs and intertwined with central values of and for learning and the development of learners who manage their own learning in life- is the essence of future teaching and development for the next century. (p. 49, Cairns, 1998a)

This idea is currently being explored and critiqued as part of an Intern/Professional development school model of final year Pre-service Teacher Education at Monash University's Gippsland Campus where 18 Interns and 18 Mentor teachers are engaged in the program across five state primary schools (Cairns, 1999). The intent of this project is to explore, clarify, critique and investigate the efficacy of the Capable Teacher idea and to further develop materials and programs to work towards its use in Pre-service and In-service Teacher Education. Comparisons and contrasts with the notions of "beginning competence" and the "expert pedagogue" form part of the debate.

In the United Kingdom, Stephenson and Yorke (1998) have presented an argument for the application of the Capability concept to Higher Education within the post Dearing Quality debate and offer a series of examples where Capability has been invoked as a credible inspiration . One of the most interesting applications of the concept in this context is what Stephenson and Yorke describe as the "Capability Envelope", a curriculum framework which they argue will assist in "creating the conditions for the development of Capability" in a Higher Education Institution context. This idea draws heavily on a three stage process approach ("exploration", "progress review" and "demonstration") all of which are controlled by the student (in both strategy and program). The areas of specialist content and activities(whether in modules, subjects or projects) forms a "core" of sorts but the essential process, its timing and direction are largely in the hands of the learner (p199-200). This example lends itself to a range of research opportunities and explicitly demonstrates the inter-relatedness of theory, research and practice within the Capability perspective.

Conclusion

This paper has argued that the term **Capability** offers a possible perspective through which Theory, Practice and, significantly for AVETRA, Research, can be viewed and that this holistic triadic conceptualisation should contribute to the Quality and Diversity of Research in the VET field.

The concept of Capability is presented as a sensibly simple rubric which enables, as a language (or labelling) feature, the identification, definition and application of a range of ideas in a manner that differentiates it from other conceptualisations in the field. The concept, it has been argued here, is robust, well grounded and because of the recursive nature of the triadic basis of its development and application involving Theory, Research and Practice, it offers much promise to the field.

Emerging applications and further developments involving the Capability perspective are strengthening and verifying the concept's wide applicability and the usefulness of the perspective as an extension of the diversity currently available and utilised in VET research paradigms.

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STAFF DEVELOPMENT PROVISIONS FOR TEACHERS/ TRAINERS IN THE VOCATIONAL EDUCATION AND TRAINING SECTOR – AN OVERVIEW

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ABSTRACT

This paper presents an overview of current arrangements for staff development activities for teachers in the Vocational Education and Training (VET) sector across Australia. The overview contains the results of a recent survey of staff development activities offered by universities and Departments of Education and Training in each State/Territories. The findings indicate a lack of consistency in minimum teaching qualifications of teachers/trainers and no apparent comprehensive database of staff development activities. The results present a picture that much of staff development in VET is still ad hoc.

Introduction

In June 1998, a team of researchers from the University of South Australia, Charles Sturt University and TAFE Queensland undertook a national project to study the role of staff development for teachers/trainers in the VET sector. This 12 month project is funded by the NREC Coordination Branch of the National Centre for Vocational Education Research. In this paper the outcomes of stage 1 of the project which involved a survey with universities and the office of training and development in the Departments of Education and Training in each State/Territory is reported. Staff development offered by Registered Training Organisations (RTOs) were excluded from the survey at this stage to allow for in-depth case studies and separate surveys for stage 2 to be conducted in February/March, 1999.

A letter explaining the nature of the project together with a proforma seeking lists of activities (programs, courses, workshops etc) that contributed towards initial teacher training, train the trainer and on-going teacher development were posted to course coordinators at universities and training and development officers in the Departments of Education and Training in each State/Territory. Data were collected from 29 universities across Australia and three State/Territory training and development officers. Staff development offered by the three State/Territory offices made up only a small percentage of activities that teachers and trainers have access. In the remaining five States/Territories all staff development functions have been devolved to the individual RTOs. Additional anecdotal data relating to minimum teaching qualifications, teacher registration requirements and funding access for staff development within each State/Territory were collected from informal networks and members of the reference group for the project. More details will be accessed during stage 2. A comprehensive database of staff development activities for VET teachers/trainers in any of the States/Territories was not found. No national database seems to exist either.

The Concept of Staff Development in VET

The use of the term *staff development* in the VET sector includes professional development as well as training and development, suggesting little or no difference between the three. However, there are differences between the three in terms of the purpose of each (Mondy & Noe 1993). Mondy & Noe (1993) perceive the primary purpose of staff development is to improve *efficiency* and *effectiveness.* Examples of staff development in VET include programs that focus mainly in the areas of VET reforms and policy changes or changes in practice (eg. flexible delivery). *Professional development* is a broader concept that encompasses a range of activities for the acquisition of skills, knowledge and attitudes to achieve current and future personal as well as career goals. Such activities are crucial for lifelong learning. Key examples of professional development activities include programs of study offered by universities. Mondy & Noe (1993) refer to *training* as learning activities that enhance competencies to improve work performances. Teachers/trainers in the VET sector acquire most of the teaching competencies during initial teacher training, however the development of additional skills is an on-going activity throughout their teaching/training career. Mondy & Noe (1993) define *development* as transformations in individuals resulting from social, cultural, technological and environmental changes. Such transformations are largely the outcomes of life experiences.

The conception of staff development for this paper remains consistent with its perception by the wider VET sector, so as not to cause confusion. That is, it comprises *staff development, professional development and training and development.* Staff development activities contribute to the holistic development of teachers/trainers, enhancing their personal and career aspirations as well as meeting their employers' needs relating to VET practices.

The Findings

MINIMUM TEACHER/TRAINER REQUIREMENTS

The minimum teaching/training qualifications required by RTOs in each State/Territory is inconsistent across Australia, although all teachers/trainers (full-time and part-time) play a key role in the skilling of the workforce through VET. The inconsistencies were observed in RTOs within each State/Territory and even within some RTOs. Private RTOs appear to be more flexible with their minimum teacher/trainer requirements. Minimum teacher/trainer qualification appears to have implications for the types of staff development that teachers/trainers are eligible for mainly for the purpose of initial teacher training. Unlike teacher registration requirements for the primary and secondary school sectors, the VET sector does not have any such prerequisite for employment. A Certificate in Teaching (offered by universities or RTOs) forms the minimum requirement by some RTOs, while others require full-time teachers to have a Diploma of Teaching or a Bachelor of Education. There is more flexibility in the minimum qualification requirements of part-time teachers, although they perform the same duties as full-time teachers. The new National Training Packages (NTPs) now include minimum human resource requirement statements. For instance, to provide training services that include delivery, assessment and issue of a qualification, teachers/trainers are required to be competent at the Category II competency standard for workplace trainer.

Some RTOs in the public sector employ full-time teachers/trainers with industry experience, but no formal teaching qualifications on the condition that such staff undertake studies to obtain a minimum teaching qualification stated by them. While some RTOs offer financial support for such studies, others allow teachers/trainers to take time during their working hours to attend lectures or workshops. The more generous RTOs support in both ways.

INITIAL TEACHER TRAINING

Universities are the major providers of programs for initial VET teacher/trainer qualifications at certificate, diploma and degree levels. Some RTOs also offer programs at the certificate and diploma levels as well as courses that are credited towards higher qualifications offered by universities. Arrangements for cross credit of courses offered by RTOs is negotiated with universities on a case by case basis. Examples of initial teacher training programs include Certificate, Associate Diploma, Diploma and Advanced Diploma of Teaching and Bachelors degree. Within each of these, a range of qualifications can be obtained. For example, at the certificate level, there are Certificate in Staff Training and Development, Certificate IV in Workplace Training (Category 1 & 2). At the associate diploma level, one can obtain Associate Diploma in Vocational Instruction, Associate Diploma in Education (Adult/Vocational) and Associate Diploma in Training & Development. Diploma in Education, Diploma in Training & Development and Diploma of Education & Training form a suit at the Diploma level. Advanced Diploma in Vocational Education & Training is on offer at the next level. Associate degrees in Further Education & Training and Training & Development are offered by some universities. Bachelors degrees for VET teachers/trainers are marketed in 15 different names belonging to two broad groups of Bachelor of Education and Bachelor of Adult & Vocational Education (or Training).

TRAIN THE TRAINER PROGRAMS

'Train the Trainer' type programs evolved from the introduction of the Training Guarantee Act and the Training Guarantee (Administration) Act of May 1990. Workplace trainer qualifications were introduced to accomplish the Act's main aim:

> . . . to increase, and improve the quality of, the employment related skills of the Australian workforce so that it works more productively, flexibly and safely, thereby increasing the efficiency and international competitiveness of Australian industry (Training Guarantee (Administration Act 1990, p.1).

Many RTOs recognise a 'Train the Trainer' qualification as the minimum teaching/training qualification of delivery staff. 'Train the Trainer' type programs are currently being offered primarily by RTOs, but more recently some universities have also added these to their list of programs. Examples of 'Train the Trainer' type activities on the national register include:

- Certificate IV in Train the Trainer
- Course in Accelerated Learning - Train the Trainer
- Course in Seafood Industry Workplace Instructional Skills (Train the Trainer)
- Course in Train the Trainer (Category 1 - comprehensive)
- Course in Train the Trainer (Category 1 - off the job)
- Course in Train the Trainer (Category 1)
- Course in Train the Trainer - Workplace Trainer (Category 2)
- Course in Train the Trainer - Child Care
- Course in Train the Trainer

The accreditation period for most of the current courses on the national register will expire by December 1999 and they will be superseded by the Certificate IV in Assessment and Workplace Training. Certificate IV in Assessment and Workplace Training complies with revised competency standards to match those stipulated in the new NTP.

The duration of 'Train the Trainer' programs ranges from one day sessions to some that extend over two weeks. Individuals who are not employed by any RTO, but intend to teach/train are the major enrollees pursuer the Train the Trainer qualification to enable them to meet the minimum criteria for a teaching/training position.

ON-GOING STAFF DEVELOPMENT

Activities for on-going staff development are numerous and on offer at regular intervals, timetabled or made available on a needs basis. Universities as well as RTOs are the major providers. Current on-going staff development activities have been grouped into three categories: those that support professional teaching practices (many leading to a formal qualification); activities that relate to reforms in VET; and activities that support systemic operations.

ACTIVITIES THAT SUPPORT TEACHING PRACTICES

Learning activities that support professional teaching practices fall predominantly within the domain of universities. More recently universities have developed customised programs for VET teachers/trainers for example programs in the Bachelor of Vocational Education and Training; Graduate Diploma of Vocational Education and Training; Graduate Certificate in Tertiary and Adult Education; Graduate Diploma in Education (Tertiary and Adult Education); and Master of Education for Teachers - Tertiary and Adult Education. Teachers/trainers have access to programs leading to qualifications at the associate diploma, advanced diploma, bachelors degree, graduate certificate, graduate diploma, postgraduate certificate, postgraduate diploma, masters and doctorate degree levels. Modules/units within the higher degrees are tiered so as to allow several exit points, thus offering a range of articulation possibilities.

Some RTOs also offer courses that support teaching practices. Among the range of courses, the more structured ones lead to formal qualifications such as the Graduate Certificate in Advanced Professional Practice and Graduate Certificate in Training (offered by the Canberra Institute of TAFE). Workshop sessions where teachers gain new knowledge and skills, have potential for credit towards courses that contribute to a teaching qualification. In addition, action learning and work-based learning projects such as those under Framing the Future and LearnScope provide opportunities for teachers/trainers to enhance their teaching practices.

Industry experience serves another avenue for VET teachers/trainers to enhance their teaching mainly through updating of skills and knowledge about current industry practices and new technologies. While some RTOs coordinate and manage industry experience opportunities for their teachers/trainers, others let individual staff organise their own.

Industry Training Advisory Boards and professional bodies/associations also play a significant role in organising activities that form part of on-going staff development for teachers/trainers. For example, the Workplace Trainers and Assessors Body has provided staff development workshops and information sessions around Australia. They have assisted VET staff in many States to establish networks that meet on a regular basis to share information and discuss relevant issues. Teachers/Trainers who belong to formal or informal networks have opportunities to add to their professional expertise through exchange of ideas and views with members of such networks. In recent times, the availability of technology such as the internet has extended their interaction with national and international members of the various networks.

ACTIVITIES RELATING TO REFORMS IN VET

Staff development activities initiated in response to national reforms in the VET sector are largely managed and coordinated by ANTA or its subsidiary bodies or contractors. Activities such as workshops, information sessions, action learning projects and work-based projects are organised across the nation. Staff development activities relating to reforms in VET appears largely to be the responsibility of the RTOs with some support from national bodies such as ANTA and Department of Employment Education Training and Youth Affairs.

ACTIVITIES TO SUPPORT SYSTEMIC OPERATIONS

Staff in the VET sector work in an environment of constant changes in policy and practice. While some of these changes affect all staff at systemic levels, others impact only on the functions of teachers/trainers. On-going staff development in this category are mainly designed and facilitated locally by individual RTOs or teams of staff from more than one RTO. Certain specialised workshops (eg. use of new technology or softwares) are sometimes out-sourced to business service providers. There are three broad categories of activities that support VET teachers/trainers in their performance in systemic/operational activities of their institute: activities that facilitate administrative functions; those that facilitate operational functions and those that enhance personal development. Activities to support systemic and operational functions are usually delivered as workshops lasting only a few hours. Certain workshop sessions are mandatory for all staff and are scheduled at regular intervals, while others are optional and organised on demand. Training sessions and workshops for personal development, for example interview techniques, stress management, time management, skill development plans and preparing for retirement are optional. The provision of funding for staff development activities to support systemic operations is largely the responsibility of the RTOs.

FUNDING SOURCES FOR STAFF DEVELOPMENT

Teachers/trainers in the VET sector have various avenues to access funding for their development. Those employed by the public sector have wider access in comparison to teachers/trainers working in the private sector. Teachers/trainers employed by the private sector are expected to take most responsibility for their on-going development, as very limited or no support is provided. However, they are eligible for partial funding from ANTA through the competitive tendering process to undertake action learning or work-based projects within Framing the Future and LearnScope.

In Queensland, under the Enterprise Bargaining Agreement, teachers/trainers in the publicly funded RTOs are entitled to funds equivalent to 2% of their annual salary for purposes of staff development each year. The management of this allocation varies among RTOs. While some allow individual staff to decide on the nature of staff development activities they undertake, eg. to pursue formal study programs, attend conferences/seminars or undertake informal activities for their development. However other RTOs have set guidelines linking to their strategic and operational plans at the systemic and faculty or department levels.

In some States (eg. Queensland and ACT) public RTOs also offer study awards to partially support studies undertaken by individual staff. The funding for such awards is provided from an allocation of State based funds. Applications are based on set criteria such as:

- The need within the institute for the qualification pursued.
- Evidence of previous study undertaken by the applicant in his/her own time.
- Evidence of previous continued interest in the area of proposed study.
- Evidence of commitment and initiative by the applicant.

In New South Wales full support for initial teacher training at the Bachelor degree level is only offered to full-time teachers who do not meet the minimum requirement, but who have relevant industry experience. Assistance is also made available to full-time teachers/trainers undertaking postgraduate studies.

Throughout Australia, all full-time teachers/trainers in the publicly funded RTOs are eligible for staff development programs facilitated by their employers. While some RTOs are generous in supporting staff development activities for part-time teachers/trainers, others offer such support only to selected individuals, depending on the demand to meet certain organisational goals. The less generous RTOs expect part-time teachers/trainers to take full responsibility for their development. Private RTOs expect this of both full-time and part-time teachers/trainers.

VET staff who are permanent public servants can also access staff development from their respective Office of Public Service in two States. For example, in Queensland the Study And Research Assistance Scheme (SARAS) supports professional development of public servants through financial assistance and leave arrangements. This form of assistance is not available for initial teaching qualifications, but for on-going staff development that is of benefit to the Public Service as well as the individual staff member. The Northern Territory has similar arrangements through the Office of Commissioner of Public Employment.

In Western Australia the Department of Training - Professional Development Unit manages an extensive staff development program for their department while the State Professional Development Support Program (PDSP) focuses on work-based staff development activities which are accessible to both private and public RTO's.

Funding for staff development in the Northern Territory is contained within the resource allocations for the public provider. Each RTO is responsible for their own staff development. NTETA subsidises conferences for VET practitioners, which are open to all VET teachers/trainers Territory.

In Tasmania the Department of Premier and Cabinet has a unit that provides staff development for government employees. Participation in any course or training program provided by the department is managed by the RTO for which the participant works.

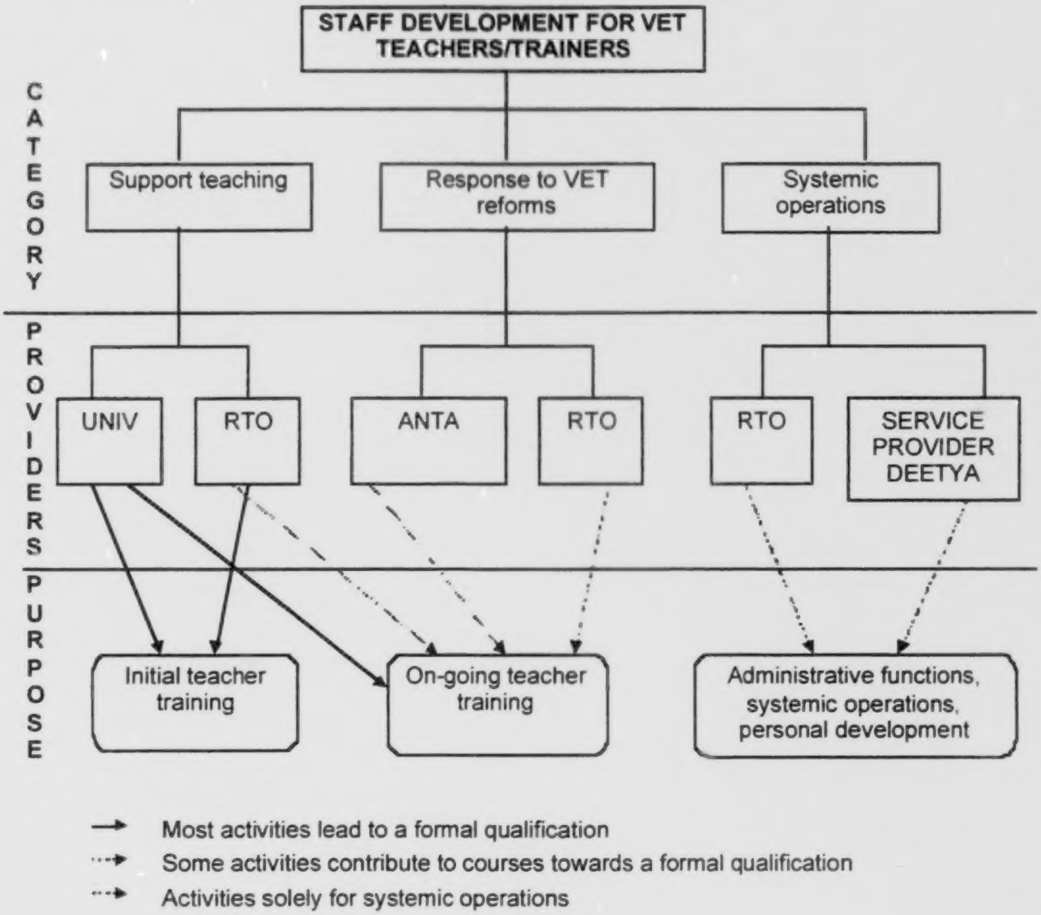
The primary source of staff development funds in Victoria, lies with the individual RTO. Each has their own sets of policies, procedures and management practices. The Office of Training and Further Education (OTFE) has a Staff Development Policy and Priorities Framework for the State Training Services (currently 1997-1999) which sets out the terms of its staff development initiatives. These projects are determined by a State Training Service Staff Development Advisory Body consisting of representatives from key stakeholders. OTFE provides project-based staff development funds to selected RTOs on a competitive merit-based basis with focus on targeted priority areas. Their arrangements are similar to ANTA's Framing the Future and LearnScope projects.

The Australian National Training Authority provides partial funding for staff development relating to reforms. For instance, up to 50% of funds (to the sum of about $15,000) for staff developments under the Framing the Future and LearnScope projects are offered by ANTA while the RTOs are expected to meet the remaining costs in kind. Application for such funding is through a competitive tendering process. Professional development under the LearnScope projects for example focus on action learning and flexible delivery. Within these projects there is much emphasis on the implementation of the National Training Packages and knowledge of the VET system.

Teachers/trainers who are not able to access funds through their RTOs or other sources, have to meet the costs of activities for their own development. Among them, some do not meet the RTOs criteria for funding applications, others pursue fields of study that are considered to be of no immediate relevance or benefit to their employer. Some others undertake study programs to enter completely new areas of practice which is not supported by the RTOs. This applies mainly to those who plan to change their area of expertise.

An overview of current staff development arrangements is summarised in Figure 2.

FIGURE 2. CURRENT STAFF DEVELOPMENT ARRANGEMENTS FOR VET TEACHERS/TRAINERS


STAFF DEVELOPMENT FOR VET TEACHERS/TRAINERS
CATEGORY
Support teaching
Response to VET reforms
Systemic operations
PROVIDERS
UNIV
RTO
ANTA
RTO
RTO
SERVICE PROVIDER DEETYA
PURPOSE
Initial teacher training
On-going teacher training
Administrative functions, systemic operations, personal development
Most activities lead to a formal qualification
Some activities contribute to courses towards a formal qualification
Activities solely for systemic operations

Discussion

Data collected have revealed many inconsistencies both across the States/Territories and within some States with regard to the provision of staff development for VET teachers/trainers. In the public sector there is provision for staff development opportunities for teachers/trainers by individual RTOs. However, within the private sector, staff development is seen to be largely the responsibility of the individual teachers/trainers.

This project identified inconsistencies in the minimum qualification requirements for teachers and trainers within the VET system. With the introduction of National Training Packages the emphasis has been on the minimum human resource requirement for delivery and assessment, which in most instances is a Category IV Workplace Trainer competency. There has been very little discussion to date with regard to teacher competencies. Inconsistencies are likely to have implications on the quality of outcomes from the delivery of VET products and services. Recent work in Queensland has indicated the significance of the impact of quality of delivery on completion rates for apprentices and trainees. Low completion rates was attributed to variations in quality of delivery (Smith, 1998).

Staff development to maintain the currency of vocational knowledge can be said to have implications for the quality of teaching/training in VET. A large survey (> 500) of full time and part-time teachers at the Sydney Institute of Technology showed that maintaining knowledge and technical currency was not a major priority for most VET teachers (Holland &

Holland, 1998). The survey showed those who had been teaching for a long time were more complacent about maintaining their currency of vocational knowledge than those with limited experience or employed on a part-time basis. Holland & Holland's (1998) case study raises issues concerning the wider VET sector. The demand to update skills and knowledge currency is perhaps higher for VET teachers/trainers, in comparison to teachers in other sectors, largely because of rapid changes in industry and their role in ensuring that learners (students) are competent and ready for employment. Teachers/trainers also have a vital role in contributing to skilling a workforce that is globally competitive. Limited funding for staff development in public RTOs is attributed to be a major reason why teachers/trainers are not able to maintain currency of their knowledge and technical currency (Holland & Holland 1998). Their comments reflect an expectation that public RTOs will continue to provide funds for all staff development. This situation seems to be exasperated by expectations from teachers/trainers, industry and unions (eg. Relating to enterprise bargaining for Queensland teachers/trainers). Recent employment trends in the public sector such as casualisation and contractual agreements have allowed RTOs to relinquish several staff development responsibilities to individual employees.

Conclusions

The implementation of current and future Training Reforms within Australia will continue to have a major impact on the role of teachers/ trainers in the VET sector. Currently most of the staff development across Australia is *ad hoc*, and there is a need for consistent emphasis to be placed on targeted programs that will assist all teachers/trainers to maintain their technical competence as well as their professional teaching/training competencies. At present there are no agreed professional standards to guide the staff development process of both public and private RTOs across Australia.

All teachers/trainers need to be fully conversant with developments in VET, and the planning and resource requirements to support quality programs in their RTOs. Without any nationally funded programs there would be very little opportunity for teachers/trainers to update their knowledge and skills. Generally, evaluations revealed that early staff development initiatives focused on awareness raising and skill development and were too generic (Simons 1997; Holland & Holland 1998). Evaluations have also shown the potential of action learning approaches to have greater impact on organisational change and participant development (Kelleher & Murray 1996). Issues with this approach still remain, however (Boydell & Leary 1996, Perkins 1997).

More recent literature has argued for the development of new models that offer a reconceptualisation of the nature of staff development. Hill and Sims (1997) argue that staff development needs to embrace the development of teachers/trainers at the professional, personal and general levels thus providing educative experiences which are not restricted to specific current or future roles. Moreover, they should cater for the reality that the nature of work is in a state of considerable change. Development needs to promote the ability of individuals to grow and change in order that they be able to meet these changing demands. Staff development should form a key element linked to quality assurance statements for VET.

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JOINING THE DOTS: MAKING THE CONNECTIONS BETWEEN VET RESEARCH AND VET PRACTITIONERS

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ABSTRACT

For VET research to be confirmed as a quality product, the outcomes must be useful and useable for VET practitioners and decision-makers. Teachers and trainers especially require research information which is practical, readily accessible and relevant to their needs. More importantly, those undertaking research and those funding it need to examine more closely the intrinsic and extrinsic barriers which exist in current dissemination strategies. To make the essential connections between research and practice, researchers need to understand how, and for what purposes practitioners access research. This paper outlines studies undertaken in nurse education to determine the factors which block the use of research in practice. The approach has application to VET research and practice.

Introduction

Since the publication of *No Small Change: Proposals for a research and development strategy for vocational education and training in Australia* in 1993, there has been a marked upsurge in research on the VET sector . Through the auspices of the ANTA Research Advisory Council and now the National Research and Evaluation Committee, significant effort and expense has been put into initiating research activity and publishing the outcomes. Perhaps now is the time to ask a series of questions about the impact of this research effort, especially in the area of VET practice. Are the critical connections between research and practice being made? How much new knowledge generated by research has been used by practitioners in the field? What are the potential blockages to the acceptance and implementation by teachers and trainers in the sector? Such questions have been frequently asked in nurse education over the last ten years. Studies on research utilisation have revealed much about aspects which deter practising nurses from accessing and using research findings and those that facilitate the transfer of research into practice. Information drawn from the clinicians themselves has gone some way to changing the way nurses feel about the value of research and of researchers. It has also opened up opportunities for understanding the cultural differences which exist between the two groups. These studies have considerable relevance to VET research and practice in Australia.

The research audience: VET practitioners

Not all VET research is directed at practice in VET. Where it is, consideration of the nature of practitioners in the sector is critical. Teachers and trainers working in vocational education, are a disparate body. They are drawn from diverse sections of industry, life experiences and educational backgrounds. They are not employed in a uniform way across institutions and systems, nor do they carry out their roles in a uniform manner. They bring with them into the VET environment such a range of values, beliefs and languages that they can never be considered as a homogeneous body. Because of these factors, researchers are confronted by a research audience which is incredibly complex in nature.

A climate of economic constraint, together with increasing casualisation of the VET workforce and diminishing resources for professional development and teacher education also do not help.

In 1993, McDonald et al noted:

> Most practitioners do not view research as very useful. This applies even more so to vocational education and training than it does to education in general, since practitioners in vocational education and training are much less likely to have exposure to research and its potential contribution to practice in their professional preparation (68).

Given the additional factors of increasingly diverse practitioner characteristics and economic limitations, there is little reason to assume that much has changed in relation to teacher/trainer acceptance of the value of research to their practice. And this would be despite a substantial increase in research funding and research activity for the sector since the 1993 VEETAC study.

Issues in dissemination and utilisation

Considerable emphasis has been placed upon the critical role that dissemination plays in the successful translation of research into practice. In recent times, however, concerns have developed about the effectiveness of existing strategies. Robinson and Guthrie (1998) identify the limited use of primary research products in VET and suggest that the development of derived products tailored to better suit the needs of a range of 'markets' may improve the situation. In *Getting the Message Out*, Morris and Spark (1997) confirm user preference for more abbreviated forms of reporting. NSW TAFE practitioners and training providers were included in this latter research study.

But, is it wise to embark upon major changes to existing dissemination strategies without having a more in-depth understanding of the factors which impede the acceptance and implementation of new knowledge in VET practice? Before taking the step of breaking research outcomes down into bite-size simplifications, we need to ask practitioners what things encourage them to use research, and what discourages them from doing so. Armed with such information, some of the issues associated with dissemination and utilisation may well be clarified.

Examining utilisation research drawn from another field is a good starting point.

Barriers and facilitators: Evidence from nurse education

Over the past ten years a large number of projects looking at research utilisation have been undertaken in nurse education in the United States. They have generally developed from efforts to use or disseminate nursing research to improve patient care. One study carried out by the University of North Carolina is of particular interest as it has application to the VET environment.

In 1991 Funk, Champagne, Wiese and Tornquist began a study to determine nurse perceptions of the barriers to using research findings in practice and to gather nurse views on what factors would facilitate such utilisation. Employing the 28-item BARRIERS Scale, researchers asked 5000 practitioners to rate the extent to which each item was a barrier to their use of research to alter or enhance their practice. Respondents were also asked to choose what they considered to be the three greatest barriers to research utilisation. Items were divided into four sub-scales relating to the characteristics of the nurse, the setting, the research itself and the way the research was presented. The items in each sub-scale are outlined below:

The nurse

- is unaware of the research
- is isolated from knowledgeable colleagues with whom to discuss the research
- does not feel capable of evaluating the quality of the research
- sees little benefit for self
- feels the benefits of changing practice will be minimal
- is unwilling to change/try new ideas
- does not see the value of research for practice
- there is not a documented need to change practice.

The characteristics of the work setting

- does not feel she/he has enough authority to change procedures
- there is insufficient time on the job to implement new ideas
- physicians will not cooperate with implementation
- administration will not allow implementation
- other staff are not supportive of implementation
- results are not generalisable to own setting
- facilities are inadequate for implementation
- no time to read the research

The characteristics of the research

- the research has not been replicated
- the nurse is uncertain whether to believe the results of the research
- the literature reports conflicting results
- the research has methodological inadequacies
- research reports are not published fast enough
- the conclusions drawn are not justified

The characteristics of the presentation of the research

- research reports are not readily available
- the relevant literature is not compiled in one place
- the research is not reported clearly and readably
- statistical analyses are not understandable
- implications for practice are not made clear
- the research is not relevant to the nurse's practice

On analysis, Funk et al found that the top ten barriers were all of those relating to the work setting, together with a lack of awareness of research (nurse), and statistical analyses not being understandable (presentation).

A lack of authority to implement changes, a lack of time and a lack of awareness of research were identified as the greatest barriers to the use of research.

The practitioners in the research nominated administrative [and management ?] support and encouragement as critical in ensuring that new knowledge gained through research was introduced to improve nursing practice. They noted that problems with research accessibility and presentation could be overcome by ensuring that reported research identified implications for practice and made very clear the way the results could be implemented in the field.

Research using the BARRIERS Scale has been replicated in the United Kingdom (Walsh 1997a, Walsh 1997b, Dunn et al, 1998) and in Sweden (Kajermo et al 1998). While the findings from these studies were generally similar to the initial US findings, improving the understandability of reports was seen as the most important facilitator by English clinical nurses. From this finding, Walsh contends that the methods and language of communication and the cultural differences between practitioners and researchers are problems which militate against the acceptance and use of much nursing research. To overcome this he suggests that researchers and practitioners must collaborate to:

1. ensure the publication of plain English research reports and articles
2. include research skills in initial training and professional development programs
3. encourage practitioners, both individually and collectively, to strive to read and understand research reports and articles.

In combination these actions will clearly strengthen the links between research and practice.

Utilising the BARRIERS Scale in our VET environment to examine the characteristics of practitioners (and researchers), VET settings, VET research and VET research presentation would seem to be a worthwhile research priority.

Improving the dialogue to bridge the cultural gap

Research findings, if they are to fulfil their ultimate goal, must be seen as valuable, useful, practical and worth accessing. They need to be taken on by practitioners, critically evaluated and then applied to real life situations with the idea that they will in some way positively change their practice.

Teachers and trainers in VET have values and aims which may be very different from those of researchers. Furthermore, the language of research and researchers is not always readily comprehensible to the practitioners for whom the findings could be most useful. As Brown (1995) notes 'it is not only the message sent which matters, but also the way it is received'(quoted in Walsh 1997a, 2).

> Audiences are not passive recipients of research messages. They actively make sense of them, interpreting them in their own way, incorporating them into their own frameworks. Sometimes these can be at considerable variance with the intentions of the author. Research for educational use, therefore, needs to follow through to see exactly how such research *is* used (Woods 1996, 150)

Individuals or organizations need to fit the new knowledge with their previous understandings and experiences. Sometimes this may require personal researcher interactions to encourage uptake of research and at other times it may require research translators/interpreters to clarify application to practice. Such interventions are likely to have a significant effect on utilisation.

It is, however, important that new knowledge is not presented in an over-simplified form. Practitioner understanding of research must be stretched and challenged. 'An educated involvement with research, a daily transformation (Eraut's term) of research knowledge into practical wisdom is something worth having'(Saunders, 1998)

Thus, dissemination strategies need to focus on:

1. clarifying the target group(s) to receive the new information
2. selecting the appropriate communication medium or media to best suit user needs
3. ensuring the information is comprehensive and timely
4. understanding the differences in culture that exist between researchers and practitioners, and
5. acknowledging the barriers and facilitators associated with successful utilisation

The right decisions about these critical aspects may overcome the blockages to research use or at least modify them.

Although devising a range of alternative approaches is bound to achieve improved interest in the findings of research, it is also important for practitioners and researchers to find the time to share the new knowledge. Ongoing discussions will require a commitment of funds and support from institutions at both a national and local level. The effect of such discourse will be to raise the credibility of research while enhancing the understanding researchers and practitioners have of each other. As Fullan (1994) suggests, good ideas and initiatives for change come together under conditions of communication and collaboration.

Conclusion

While working to improve the ways research can be disseminated and utilised in the vocational education and training sector in Australia, there is also a real need for researchers to ask practitioners the value they are now placing on research. Clarification of what impedes a ready acceptance of research and what things encourage teachers and trainers to seek out and implement new knowledge, will help make better connections between research and practice. The experiences in research into nurse education are supportive of such an approach.

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MAKING JUDGEMENTS: PRACTICAL STRATEGIES FROM RESEARCH OUTCOMES

Catherine M. Down
Paul Hager

This paper has been prepared in support of an investigative workshop which will enable participants to explore the nexus between the Key Competencies and the formation of sound judgements. It relies heavily on a paper on a paper prepared by Paul Hager in 1998 for the NSW Department of Training and Educational Co-ordination. It is intended to provide the theoretical underpinnings and rationale for the material covered within the workshop. It is organised in the form of a short introduction followed by a definition of what is meant by making workplace judgements. Some of the key findings from research and pilot projects on the integration of the Key Competencies within vocational and general education are then outlined followed by a discussion of the role of the Key Competencies in the formation of judgements. The paper ends with a number of exercises which will be explored in the workshop and a brief concluding statement.

Following the release of the report of the Mayer Committee in November 1992, there has been considerable exploration, through research and the conduct of trial projects, of the implications of systemically integrating the Mayer Key Competencies into school and vocational education and training (VET) programs. The outcomes of this research effort provide a rich source of practical strategies for VET practitioners. These strategies cover a wide range of educational activities including the design and development of curriculum, teaching and learning, assessment and reporting.

The Key Competencies were described by the Mayer Committee as representing the set of competencies which enable people to transfer and apply knowledge and skills developed in classrooms and other learning situations to the workplace. As such, they represent a crystallisation of "an agenda for an emphasis on higher order competencies in the process of general education and the development of more *adaptable, productive and autonomous* workers, persons and citizens" (MCEETYA Schools' Taskforce 1996, p. 9).

Subsequent research, for example Billet (1998), has questioned the concept of transfer of competence as generally described within educational psychology literature and proposed that transfer has social and contextual dimensions which need to be taken into account. This suggests that the role of the Key Competencies and the significance of context to them must also have a strong contextual basis.

Hager (1998) argues that the Key Competencies are fundamental to the process of humans making judgements and that the development of the Key Competencies is linked to the capacity to form sound judgements. He notes that research has identified four major characteristics of the Key Competencies which also apply to the construction of judgements. That is, they:

- cluster in actual learning and work situations
- are highly sensitive to contextual factors
- can be thought of as a process as well as an outcome
- are developmental.

A recognition of the nexus between the formation of judgements and the Key Competencies enables us to better conceptualise the role of the Key Competencies with respect to the development of workplace competence. Workplace competence might be defined as the accumulated knowledge, skill, experience and attitudes which can be applied to tasks within a workplace. Such competence is not a static quality but is in a constant developmental flux. The formation of workplace judgements relies on and is underpinned by this workplace competence and at the same time develops and transforms it. Thus, the process of making judgements is, like the application of the Key Competencies, "simultaneously underpinning, enabling, integrating, transforming and developmental" (Down 1997, p 8) .

This also implies that the development of the capacity to make sound workplace judgements will be enhanced by the systematic use of reflection within learning processes. By forming habits of reflecting, not only on what we have learnt but also the processes involved within such learning, we are able to strengthen such learning. The Key Competencies are both necessary for this process and enhanced by it.

This workshop provides participants with the opportunity to explore the process of making workplace judgements and the role of the Key Competencies within this process. The activities undertaken will also assist participants to recognise the double loop learning gained through systematic reflection on the process. By making explicit the elements within cognitive processes, we are able to enrich the outcomes and enhance our competence, especially with respect to the making of judgements.

Making workplace judgements

Judgement involves deciding what to believe or do by taking into account a range of relevant factors and acting accordingly (Hager 1998, p. 7). The making of judgements involves identifying and valuing relationships between factors and the context within which the judgement is made. The Key Competencies provide the cognitive tools for establishing and applying such relationships.

Sound judgements take into account the particular circumstances in which they are made. That is, they are contextually sensitive. This contextual basis is reflected in the emphasis placed within workplaces on experience, commonsense and nous. Sound judgements require the ability to differentiate the nuances of meaning which exist within particular workplaces, to express ideas and information in communicative forms compatible with such workplaces, to collect, analyse and organise workplace data and information and to recognise the social, cultural and political organisations and structures which impact on work situations.

Lipman (1991) sees judgement as central to effective thinking. He argues that, if inquiry is the process through which thinking is learnt, then the product of effective inquiry is judgement. He defines "thinking as a process of finding or making connections and disjunctions" (p. 159). Such connections and disjunctions are the relationships which are the objects of judgement.

In considering the development of the capacity for making sound judgements, three orders of judgements need to be considered. These are:

Generic judgements

Such judgements are the most abstract and include judgements of similarity, difference and identity

Mediating judgements

These are less abstract and include judgements of causation, value, fact and relevance

Culminating judgements

These are the least abstract and apply directly to life situations. These include ethical, social, scientific, technological, professional and aesthetic judgements.

Lipman's view is that the first two orders of judgement underpin culminating judgements, something that he claims has not been widely recognised. Hence the reflective model of educational practice should cultivate the making of all three orders of judgements, since neglect of generic and mediating judgements commonly results in poor or mistaken culminating judgements

Lipman further argues that making judgements is not simply a function - something we do - but a developmental and transformational process. That is, making judgements, like applying the Key Competencies, is both a process and the outcome of that process.

> ....judgments, unlike skills, are minuscule versions of the persons who perform them. This is so in the sense that each and every judgment expresses the person who makes the judgment and at the same time appraises the situation or world about which the judgment is made. We are our judgments and they are us. This is why the strengthening of my judgment results in the growth and strengthening of myself as a person. (Lipman 1991, p. 171)

Characteristics of the Key Competencies

The main trends and findings from the key competency pilot projects that have been conducted so far in Australia are summarised in a number of recent documents (Ryan 1997; MCEETYA Schools Taskforce Working Group on Key Competencies 1996; Hager, Moy & Gonczi 1997).

The major findings are that the Key Competencies:

- are overlapping and inter-related, rather than discrete processes with their own clearly identifiable performance levels
- must be contextualised in authentic or simulated environments
- should be viewed both as processes (involving enabling or underpinning knowledge) necessary for higher order learning and workplace performance *and* as outcomes
- are developed throughout life and with lifelong relevance
- can be learnt and should be taught
- are implicit in much of existing curricula
- should be integrated explicitly and systematically with technical competencies and into all aspects of training
- are an effective device to improve and motivate student learning
- provide a suitable framework for assessing achievement when statements of course learning outcomes integrate appropriate key competencies
- give a desirable explicitness and focus to the idea of the lifelong practical relevance of general education
- involve competencies that employers say they want and workers in high performance workplaces actually display

The first four of these findings provide the basis of this paper and its associated workshop as they not only provide the nexus between the Key Competencies and making judgements but they also provide the framework for practical approaches towards teaching and learning for and in vocational settings.

1. CLUSTERING OF THE KEY COMPETENCIES

Following the release of the Mayer Committee's report, it was commonly assumed that the Key Competencies were discrete independent skills each to be taught and assessed singly. For many this type of thinking has apparently been encouraged by acquaintance with the psychological literature on transfer with its emphasis on minimising and controlling variables. However, the research findings such as those of Gonczi et al. (1995), Lilly et al. (1996) and Down et al. (1997) suggest that when any significant unit of work is considered, the Key Competencies occur in complex clusters along with other more specific competencies. Analyses of significant work activities indicate that they typically feature both specific work skills and key competencies (usually more than one) as well as aspects of the particular work context. Thus, work contexts integrate specific skills and Key Competencies. The Key Competencies provide a framework for holistically describing and conceptualising work as a basis for training. If particular units of work can be described without involving the Key Competencies, then the work units are probably being described too narrowly to be useful from a training perspective.

All the major DEETYA-funded research projects on the implementation of the Key Competencies within the VET sector argued against a prevailing myth which viewed the Key Competencies as discrete entities which could be described and taught in isolation and then transferred to new situations. This runs counter to commonly used conventions for describing work in terms of discrete, specific skills. Recent research projects (Gonczi et al 1995, Hager et al 1996, Stasz et al. 1996), demonstrated that specific skills are deployed in a context which typically changes somewhat from work site to work site, from client to client, from order to order, from case to case. The requirement that skilled work take into account changing context will, per se, involve the clustering of specific skills and the Key Competencies within a contextual framework.

Because work is seldom as narrow as task-based competency standards might suggest, the Key Competencies are far from being 'optional extras' in workplace learning and training. If these activities are being carried out well, then they will automatically incorporate and contextualise at least some of the Key Competencies. The same clustering of the Key Competencies both with one another and with more specific skills was identified in research carried out on the inclusion of the Key Competencies within school-based education. Thus, the pilot projects strongly recommended the adoption of holistic, integrative teaching and training orientations.

2. CONTEXTUAL SENSITIVITY OF THE KEY COMPETENCIES

Recognition of the contextual nature and sensitivity of workplace competence has been institutionalised in the acceptance of enterprise specific competency standards (eg. McDonalds Family Restaurants, Chubb Security) and the contextualisation of industry standards within specific enterprises or sectors of an industry (eg. Parks Victoria, Ford Motor Company). Given the clustering of the Key Competencies with other more specific competencies discussed above, it follows that the context in which they are developed and applied will strongly affect the nature and applications of the Key Competencies. That is, the role of Key Competencies is strongly sensitive to changes in work context. The different forms that the Key Competencies take in different workplace contexts has now been confirmed by both Australian (Gonczi et al. 1995, Hager et al. 1996, Stevenson 1996, Down et al. 1997) and overseas (Stasz et al. 1996) research. Stasz et al. concluded that:

> ...whereas generic skills and dispositions are identifiable in all jobs, their specific characteristics and importance vary among jobs. The characteristics of problem solving, teamwork, communication, and disposition are related to job demands, which in turn depend on the purpose of the work, the tasks that constitute the job, the organisation of the work, and other aspects of the work context. (p. 102)

The Australian research also found that different combinations of the Key Competencies are required in different industries and occupations. It has been found also that the key competencies are major features of work in workplaces that focus on high performance or high quality products (Field & Mawer 1996, Gonczi et al. 1995).

Noting the contextual sensitivity of the key competencies in classroom and workplace situations, the pilot projects on the implementation of the Key Competencies within the school and VET sectors concluded that teaching and learning methods that appear to work well include critical incident scenarios, problem-based learning, and trainer and trainee assessment tools which integrate the key competencies. Mapping activities and the development of contextualised descriptors were also useful in relating the Key Competencies to workplace training activities and in identifying areas in which the Key Competencies could be used to improve current practices.

3. KEY COMPETENCIES AS BOTH PROCESSES AND OUTCOMES

Field testing has demonstrated that it is helpful to view the Key Competencies as both processes and outcomes. It was found that

> .... they all share a common process, where the common features of the key competencies are: establishing a sense of purpose; selecting appropriate strategies; implementing strategies; and evaluation of both the process and the product. (Ryan 1997, p. 15)

Such a finding fits well with the holistic (or integrated) approach to competence which has been widely adopted in Australia. According to this approach, competence is conceptualised in terms of knowledge, abilities, skills and attitudes displayed in the context of a carefully chosen set of realistic occupational tasks which are of an appropriate level of generality. This approach to competence seeks to link general attributes to the context in which these attributes will be employed.

A feature of this integrated approach is that it avoids the problem of fragmentation by selecting key tasks or elements that are central to the practice of the occupation. The main attributes that are required for the competent performance of these key tasks or elements are then identified. When both of these are integrated to produce competency standards, the results capture the holistic richness of the practice of an occupation, including such things as professional judgement. This approach also allows for there being more than one appropriate response in a given situation, as well as for the framing of unique responses to changing contexts.

To focus on the deployment of the attributes (knowledge, attitudes, and skills) to the completion of tasks in contextually sensitive ways, is to focus on the process aspects of competence and what underpins it. Typically, clusters of the Key Competencies feature in these attributes. Alternatively, a focus on the broad range of general and specific tasks that comprise an occupation points to the kinds of outcomes expected of courses that prepare candidates for the occupation. An analysis of these outcomes will show that their achievement logically presupposes a variety of attributes, many of them Key Competencies. Thus Key Competencies, and attributes generally, can be viewed as both processes and outcomes.

4. THE DEVELOPMENTAL CHARACTER OF THE KEY COMPETENCIES

It is important that the acquisition of proficiency in the Key Competencies needs to be seen as a developmental process stretching over a substantial part of the life span. The application of the Key Competencies within work and learning reshapes and transforms our experience and competence in using them. When trainees/apprentices start their employment with a firm, their participation is peripheral and they are seen as only partly legitimate members of that enterprise. The more that trainees/apprentices become full participants in the social and technical world of the enterprise, they apply the key Competencies in more and different ways with an increasing level of complexity within their work performance.

Similarly from the early years of schooling, and even before, learners can be expected to be in situations in which they would be acquiring some basic proficiency in deploying at least some of the Key Competencies, eg. using household microelectronic technology. One outcome of a sound education would be a growing capacity to deploy successfully these competencies in an increasingly diverse range of situations and contexts.

Since sound performance in very many of life's situations centres on successful deployment of suitable combinations of key competencies, the development of the key competencies should become gradually more integrated and holistic as young people move through schooling. Such a staged development of the key competencies would facilitate students' transition to work and other post-school activities.

However, it is crucial that the Key Competencies should be thought of more broadly than in terms of just school and work. These competencies represent a basis for lifelong learning in all kinds of life situations. Rather than being viewed as discrete skills that people learn to transfer, the Key Competencies should be seen as learnt capacities to handle an increasing variety of diverse situations. Thus transfer can be seen as a growth in confidence and adaptability as learners experience increasing success in their deployment of the key competencies to a range of situations. The role of the Key Competencies within such transfer is enabling, transforming and developmental and is related to a growing understanding of how to deal with different contexts. In this way, non-work experiences can benefit workplace performance and vice versa.

Role of the Key Competencies in making judgements

Hager (1998, pp. 8,9) argues (substantially influenced by the 'Essential Elements Statement' contained in the NSW Key Competencies Project report (Ryan 1997, p. 122 - 124)) that in typically making and/or implementing a judgement, people will engage in some or all of the following processes:

acquiring an information base for the judgement

Where necessary, appropriate information will be gathered, evaluated and ordered. This applies both in everyday life (eg. someone thinking of adding an extension to their family home needs to consider dimensions, materials, architectural styles, cost options etc.) and at work (where information is gathered from clients, patients, customers, policy makers, managers, handbooks, trade manuals, catalogues, co-workers, suppliers, etc.).

communicating what needs to be done, what has been decided or what needs to ascertained clearly and coherently to others

This will be done in ways that are judged to cater for the type of audience. Where necessary, the communication will be revised and modified to ensure its purpose is achieved. For example, in the workplace, communication with clients, patients, or customers, will be recognisably different from communication with co-workers or fellow practitioners.

planning and organising activities judged suitable to the case

Priorities will be set to attain goals in a timely and efficient way. The procedures will be modified as they are implemented if changing circumstances require it. This is as true of the planning and organising involved in developing, implementing and monitoring a business plan, as it is of a health profession treating a patient's medical condition or of a motor mechanic repairing a customer's car.

working with others and in teams to form and /or to implement the judgement

Cooperating with others or working in a team are often prerequisites for arriving at a sound judgement; equally they are often important in its implementation, as the examples outlined above show. It is vital that people are clear on what their contribution to the judgement formation or implementation is, and take responsibility for performing accordingly.

using mathematical ideas and techniques in forming and /or in implementing the judgement

In many instances of judgements being formed and exercised, the judgements are informed by and rely to some extent on appropriate application of mathematical ideas and techniques. For example, monitoring quality processes within a manufacturing environment or in developing budget plans.

using technology in forming and /or in implementing the judgement

Similarly, many instances of judgements being formed and exercised rely on some application of technology. For instance, in designing and implementing preventive and predictive maintenance system the judgements made are informed by and rely to some extent on appropriate application of technology.

solving problems involved in forming and /or in implementing the judgement

Part of arriving at sound judgements and successfully implementing those judgements is to anticipate and clarify problems that arise and to identify and apply strategies that suitably address the problems.

These considerations indicate how judgements tend to be nested within judgements, ie, the implementation of larger judgements such as adding an extension to a house or repairing a car, involve further judgements along the way, such as whether the building works are on schedule or whether a particular piece of equipment is performing satisfactorily.

Workshop exercises

The following exercises are drawn or adapted from the major DEETYA-funded Key Competencies research reports conducted in New South Wales, Victoria and South Australia. They use participatory learning strategies such as the use of critical incidents, investigative or inquiry-based learning, problem-based learning, project learning and reflection. As such, they are designed to:

- contextualise learning
- draw on the experience of other learners to enhance their own and others' understanding
- review, praise and reinforce positive achievements
- discuss and learn from negative situations
- explain how performance is linked to goals within a workplace
- help learners think about how their values and actions can affect others
- help learners think about other possible viewpoints (such as those of customers, suppliers, colleagues and supervisors)
- prepare learners to deal with similar incidents, problems and situations
- think about alternative approaches which could be used in the future

All the exercises involve the formation of judgements from a given scenario. As part of the workshop, participants will role play aspects of the scenario, make decisions as to actions which could be taken, reflect on their deliberations and identify the cluster of Key Competencies involved in their recommended actions. In addition, participants will be encouraged to reflect on the Key Competencies used to participate effectively in the workshop exercises.

The workshop will conclude with a plenary session where participants will report back on their deliberations and the insights gained.

Conclusion

The nexus between making judgements provides us with an organising framework for ensuring that the development of the Key Competencies is built into teaching and learning. Although the Key Competencies developed within the context of transitions from schooling to work, their application is much broader than this and provide a basis for lifelong learning in all sorts of situations.

In addition, focusing attention on the holistic, integrated, contextual character of the Key Competencies via their central role in human judgement has the effect of advantageously addressing a number of current educational issues. These include the need to:

- enrich competency approaches in general
- give more substance to the notion of lifelong learning
- develop effective ways to think about work-based learning.

Such attention needs to be supported within vocational education and training by the use of participative learning strategies and systematic reflection to enable learners to develop and enhance their capacity to make sound judgements in their work, learning and daily life.

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Workshop Exercise 1

WE1 Scenario

We have all witnessed or been involved in workplace accidents on at least a minor scale. In this scenario, a particular accident is selected and discussed so as to form judgements as to its cause and the appropriateness of the action taken to handle the situation and to prevent its re-occurrence.

Group participants take the roles of a safety committee looking into a workplace accident that has occurred. One member of the group reports on the incident and the others (in the role of union rep, OH&S Manager, Supervisor, Area Manager etc.) ask questions as to the accident, its cause(s), effects and the prevention measures which have been adopted to prevent its re-occurrence are discussed.

Hint

Use a real incident. The person reporting should have been a spectator to (or well informed about) the accident and know what actions were taken after the incident.

Activity

1. Describe the witnessed accident and the actions which were taken as a consequence of it.
2. Identify why the incident occurred.
3. Review how key people handled the situation:
    - note instances of sensitive and constructive behaviour to ensure that morale and teamwork aren't damaged
    - consider different ways of handling the situation.

1. Identify the judgements which were made during and after the incident and which of the following Key Competencies were applied:
    - collecting, analysing and organising information
    - communicating ideas and information
    - planning and organising activities
    - working with others and in teams
    - using mathematical ideas and techniques
    - solving problems
    - using technology.

1. Discuss:
    - what positive elements could be applied to other situations?
    - what could be done differently next time, why and the likely outcomes?
    - what judgements have you as a group made during this exercise and which of the Key Competencies were used in this process?

Workshop Exercise 2

WE2 Scenario

A common retail strategy is to have a display of wares just outside the doorway to a shop. Often these goods are being offered at special prices or it may be a new line. Such displays can also be used to clear stock which has been slow to sell or to entice people into the store.

The staff of the "Clothes-R-US" fashion boutique (the sole fashion store in a small country town) consists of the manager, a permanent senior assistant, a trainee and a number of part-time assistants. At a staff meeting the effectiveness of the current rotation of the stock positioned at the store entrance during weekend trading is to be discussed. The senior assistant notes that there has been some complaints from older customers that young people hang around the display and obstruct the doorway. The trainee seeks clarification of what the purpose of the display is.

Activity

1. Describe the purpose(s) of the display.
2. Identify problems which have occurred and how these might be resolved or minimised. Note any conflicts of interest.
3. Review how key people have handled the situation:
   - note strategies used to relate negative incidents sensitively and constructively so that morale and teamwork aren't damaged
   - consider different ways of handling the situation

1. Identify the judgements which were made during the discussion and identify which of the following Key Competencies were used in the formation of these judgements:
   - collecting, analysing and organising information
   - communicating ideas and information
   - planning and organising activities
   - working with others and in teams
   - using mathematical ideas and techniques
   - solving problems
   - using technology.

1. Discuss:
   - what positive elements could be applied to other situations?
   - what could be done differently next time, why and the likely outcomes?

Workshop Exercise 3

WE3 Scenario

A trainee hairdresser meets with her first "customer from hell". She is encouraged by the salon owner to watch how the more experienced staff deal with the customer's demands and complaints. During a lull in work activities shortly afterwards, the staff gather round and the trainee is encouraged to work through the following steps assisted by more experienced members of the salon staff.

Activity

Role play this impromptu meeting by contributing other incidents of "customers from hell" and the successful strategies which have been employed

1. Describe the behaviour of the customer.
2. Identify why the incident occurred.
3. Review how key people handled this and similar situations:
   - note strategies used to deal with the customer sensitively and constructively so that customer satisfaction and staff morale and teamwork aren't damaged
   - consider different ways of handling the situation

1. Identify the judgements which were made by experienced staff to deal with such situations and identify which of the following Key Competencies were important:
   - collecting, analysing and organising information
   - communicating ideas and information
   - planning and organising activities
   - working with others and in teams
   - using mathematical ideas and techniques
   - solving problems
   - using technology.

1. Discuss:
   - what positive elements could be applied to other situations?
   - what could be done differently next time, why and the likely outcomes?

Workshop Exercise 4

WE4 Scenario

This scenario is concerned with the need for retail staff to be able to process a sale quickly, efficiently and accurately. For many retail outlets, the majority of transactions tend to be concentrated during the lunch period. This means that trainees often encounter difficult or unfamiliar transactions during these busy periods. The following scenario and questions help learners to explore the issues concerned and to develop improved strategies for dealing with customers

You have a queue of five customers and the first customer wishes to cancel a lay-by. It has been a week since you have had to process a similar transaction and you have difficulty remembering the steps involved.

The other four customers are restless and are showing signs of impatience. One customer has expressed her hope that the wait is not too long as she has only a short lunch period in which to shop.

Activity

As a group, discuss what you think the trainee should do to process the cancellation quickly and keep all five customers contented? Look at the following approach and work through the following questions.

Suggested Approach

- acknowledge all of the customers
- explain that you will be with them as soon as possible
- systematically follow the instructions in the administration manual for cancelling a lay-by
- do not rush. Stay calm and efficient
- thank the other customers for waiting
- process the remaining sales.

➢ What are the advantages and disadvantages of this approach? How might it be improved?

➢ Are there any other approaches which might be appropriate?

➢ How are the Key Competencies involved in addressing this problem scenario?

Workshop Exercise 5

WE5 Scenario

A particular hotel is experiencing a "slack" period in the first weekend of May. The manager has taken advantage of the lull and has gone to see his ailing mother who lives three hours drive distant. The trainee manager, temporarily-in-charge receives notification that there has been a minor collision between two taxiing planes and that he is to consequently expect, in three hours time, a group of 50 stranded airline passengers for an unscheduled lay over. The people are a mix of nationalities and age groups.

Whilst he can guess that the travellers will want to check into their rooms immediately, will be tired and annoyed that their planned itinerary has been upset, will need to make special arrangements and will need to notify others of their changes of plans, he has not previously had first-hand experience of such a situation. In addition to the manager's absence, there are two staff who have been given special leave. He decides to call together the remaining staff to brainstorm what will need to be done and to allocate responsibilities

Activity

Role play this impromptu meeting with each participant taking on the role of a different staff member (concierge, housekeeper, front-desk, chef, administration etc.)

1. Describe the tasks that need to be attended to and assign responsibilities.
2. Identify likely problems.
3. Review how people have handled the situation in the past:
   - note the strategies used to deal with negative incidents sensitively and constructively so that morale and teamwork aren't damaged
   - consider different ways of handling the situation

1. Identify which of the following Key Competencies were important:
   - collecting, analysing and organising information
   - communicating ideas and information
   - planning and organising activities
   - working with others and in teams
   - using mathematical ideas and techniques
   - solving problems
   - using technology.

1. Discuss:
   - what positive elements could be applied from other situations?
   - how the group can learn from the experience and systematise this learning?

RESEARCH ON FLEXIBLE LEARNING/DELIVERY: UNDERSTANDING TERMS

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ABSTRACT

The authors are undertaking research into a number of aspects of flexible delivery and flexible learning in the Vocational Education and Training and higher education sectors. This research leads the authors to question some of the understandings about the nature and practices of flexible delivery and flexible learning that are held both across and within these sectors. It is clear that there are some similarities of policy and practice, but also some sharp, and some not so sharp, distinctions to be found.

This paper reviews recent literature on flexible delivery and flexible learning, and compares this with current conceptualisations and interpretations in the field as revealed in the authors' research projects. The authors argue a case that researchers of flexible learning and flexible delivery in VET need to be clear about their conceptualisations of flexible learning and flexible delivery which underpin the design, analysis and implementation of their research. Such differences in conceptualisation make the comparison of findings between research projects problematic.

Introduction

In the 1990s, the terms 'flexible learning' and 'flexible delivery' roll off the tongues of many people in education and training circles. Although there is talk about how to do it, how to enhance it, whether or not it is suitable to different applications, and whether or not it is effective, there have been few attempts to say what is meant by these terms. Peoples, Robinson and Calvert (1997, 6) have reviewed a number of definitions and have observed "The term flexible delivery is being asked to carry too many notions". Indeed, in the course of different activities in which we have been involved together it has become clear to us that we may not understand these terms in the same way. Over the past decade, Evans has principally worked in universities and Smith has principally worked in vocational education and training (VET). Our contrasting experiences, linked to the different histories, ideologies and policies in the respective educational sectors, contributes to our different, taken-for-granted understandings of these terms; indeed, of our particular selection and use of these terms.

In this paper we chart some of the similarities and differences between the two sectors with respect to their use of the terms 'flexible learning' and 'flexible delivery'. We do so, not just to illustrate these similarities and differences, but also to illuminate the purposes and orientations of the two sectors when they practice flexible delivery or flexible (teaching and) learning.

Context

In its publication, *Flexible Teaching and Learning at Deakin University* (Deakin University, 1997), the University explicitly recognises the varied understandings and practices that surround the terms flexible learning, flexible teaching and flexible delivery. The Deakin publication observes:

> 'Flexible teaching and learning' can mean different things to different people both within and outside the university. ...However, the vision is fundamentally about making the University's course

> offerings more accessible in a broader range of educational settings (on-campus, cross-campus, off-campus, workplace, home, international) to a more diverse range of student groups studying at undergraduate, postgraduate and advanced professional levels (Deakin University, 1997, 7)

It can be concluded in this instance, that flexible approaches to teaching and learning require some relaxing or removal of place and time constraints in the educational experience. Technologically mediated forms of education facilitate greater flexibility in the time and/or the place of teaching and learning and in the provision of resource-based forms of teaching suitable for different contexts and student groups.

Captured in this set of observations about flexible teaching and learning are what appear to be the cornerstones of the concept: flexibility in time of learning and place of learning. However, unstated and unexplored in the Deakin description are: flexibility of entry, of progress and pace of learning, of assessment, or of content, each of which has been associated—at various times and to varying degrees—with the notions of flexible teaching or flexible delivery. Elsewhere in the Deakin publication, which was produced as a guide to assist teaching staff in moving towards flexible teaching, these issues are addressed with argument and advice.

In the vocational education and training sector, the Flexible Delivery Working Party's publication, *Flexible Delivery: a National Framework for Implementation in TAFE*, proposed the definition of flexible delivery as:

> Flexible delivery is an approach to vocational education and training which allows for the adoption of a range of learning strategies in a variety of learning environments to cater for differences in learning styles, learning interests and needs, and variations in learning opportunities (Flexible Delivery Working Party, 1992, 2).

In contrast to Deakin, the Working Party's statement is more individualist, and is focused on learning rather than teaching. However, the use of the term 'delivery' instead of 'teaching' (as in Deakin's 'flexible teaching and learning' may be significant here and is a matter we shall pursue later. A difficulty with the Working Party definition of flexible delivery is that it fails to identify any features that are not present in the competent teaching of any group in any situation. Indeed, it implies that all delivery (teaching?) which is not 'flexible delivery' is rigid in method, content and expectation. Thus, without flexible delivery being valued and deployed by teachers and trainers, they would behave in an automatic and rigid way, taking no account of learners' needs or circumstances, and making no variations.

By 1996, the Australian National Training Authority's National Flexible Delivery Taskforce had adopted a somewhat different definition:

> Flexible delivery is an approach rather than a system or technique; it is based on the skill needs and delivery requirements of clients, not the interests of trainers or providers; it gives clients as much control as possible over what and when and where and how they learn; it commonly uses the delivery methods of distance education and the facilities of technology; it changes the role of trainer from a source of knowledge to a manager of learning and a facilitator. (ANTA, 1996, 11).

Ironically, this description is precisely that proposed by Johnson (1990, 4) to define 'open learning', and captures the two elements most commonly associated with flexible delivery: extended access to learning through the removal of barriers; and learner-centred provision where learner choice is the key.

Clearly, between 1992 and 1996 there was a shift in the conceptualisation of flexible delivery in the VET sector as expressed in national policy. The 1996 definition is clear that an important feature of flexible delivery is *client control*, including control over *what* is learned. We suggest that the nub of the difference between the term as used in the university sector and as conceptualised in VET is this idea of *client control*, not just over the time and place of learning, but over *what* is learned, and the *pace* at which it is learned.

While the notion of client control comes through clearly in the ANTA description, Peoples, Robinson and Calvert (1997) note that there is ambiguous use of the term 'client'. It is unclear whether the 'client' is the enterprise requiring the provision of training, or the individual learner, or even whether the intention is to include both parties. Such ambiguity in identifying the client in VET is by no means restricted to flexible delivery (see King, 1996).

The origins of the terms

DISTANCE EDUCATION ROOTS

A definition of distance education and its key characteristics was addressed by Keegan (1980) before the newer terms of flexible learning and flexible delivery emerged in the language of educators. Keegan's work was driven from a similar issue in that there had developed confusion between the newer term distance education, and the older commonly used terms such as home study, external studies and correspondence study. Keegan reviewed a number of definitions of distance education and concluded that the main elements any definition needs to include are:

- the separation of teacher and learner (to distinguish from face to face instruction)
- the influence of an educational organisation (to distinguish from private study)
- the use of technical media (including print) to unite the teacher and learner, and to carry the educational content
- the provision of two-way communication between teacher and learner
- the possibility of occasional meetings for both didactic and socialisation reasons
- the participation in an industrialised form of education where there is division of labour such as instructional design, graphics, word processing and typography, teaching etc. (Keegan, 1980, 33).

The Keegan formulation provides an insight into the distinction that may be made between distance education and flexible learning in that Keegan does not include any notions of flexible entry or exit, or learner control over content, sequence and pace of progress. The features of distance education proposed by Keegan are preserved in a provision of education or training that has a set syllabus which learners must cover, and determined periods of study such as semesters, and expected progression rates to meet provider requirements for assessment and receipt of accredited awards. The characteristics of flexible learning can be met, however, in a system of educational provision which provides for substantial learner control over content, sequence, and progression. However, if external controls are imposed, they are not imposed by the training provider but rather by another party such as the learner's employer or industry body. Ellington supports the contention that the key characteristics of flexible learning lie within the notion of learner control when he writes:

> ...I would suggest that we all try to promote the general adoption of this wider interpretation, and start using the term 'flexible delivery' as a generic term that covers all those situations where the learners have some say in how, where or when learning takes place—whether within the context of traditional institution-centred courses or in non-traditional contexts such as open learning, distance learning, CAT schemes, wider access courses or continuing professional development (Ellington, 1997, 4).

Ellington (1997) has traced the origins of the term flexible learning to the 1970s, when the Flexible Learning System (FLS) was developed in the United States for use in schools. The FLS was a package designed for teachers to assist children to develop problem-solving attitudes and skills, and with a focus on shifting problem solving in the classroom from teachers to pupils (Yinger and Eckland, 1975). In Britain, Ellington has traced the term to the early 1980s and observes that, by 1986, there was sufficient activity for the Association for Educational and Training Technology to make Flexible Learning Systems the theme for its Edinburgh conference.

HIGHER EDUCATION ROOTS

In the university sector, the term has emerged from the rapid and major changes that were made during the 1980s to the way in which distance education was provided. Evans (1999 in press) has analysed the changes to flexible delivery in Australian higher education in the context of the prevailing ideological forces at work in Australia and internationally. We shall draw on this work to make our case here.

Over the past decade or more, Australian governments and policy makers of various political persuasions have been influenced by the Reagan and Thatcher ideology of new economic rationalism or market libertarianism. This influenced strongly the conditions of higher education from the late 1980s when Dawkins and his advisers, created a storm of discussion and debate with the 'Green Paper' (Dawkins, 1987) and 'White Paper' (Dawkins, 1988) on higher education. Although it formed only a small part of these documents, distance education was to be changed irrevocably as a result. Arguably the ground was prepared for flexible delivery and flexible learning in the higher education sector during this period, although it is debatable if this was an explicit intent. Effectively the Hawke Labor Government moved simultaneously: to require higher education institutions to meet certain levels of enrolment in order to receive funding allocations; to disband the distinctions between the Colleges of Advanced Education (CAEs) and universities; and—crucially for our argument here—to restrict the provision of distance education to eight institutions which were declared as Distance Education Centres (DECs) (see, especially, Jakupec, 1996, 82 and also Johnson, 1996). Institutions that were not declared as DECs could only offer distance education courses in partnership with a DEC which would provide the materials development and distribution service. The government funding for such courses would be split between the two partner institutions.

It will be well-known to those in the field that such partnerships were rare. Institutions which had fought competitively for students for several years and which had now been plunged into a tussle over DEC status were not predisposed to enter into a cosy relationship between victor and vanquished. Indeed, although some of the vanquished dropped distance education provision, others opted to surreptitiously maintain theirs. It is arguable that, in part, flexible learning and flexible delivery were to become terms in the discourse of surreptitiousness. 'Distance education' dropped from their lexicon and in its place came a variety of other terms such as 'extended campus', 'open campus' and 'flexible delivery' or 'flexible learning'. Some practices were changed to avoid falsely reporting to government that the students were 'off-campus' students. Typically, some form of on-campus attendance was required but not necessarily at the main campus, rather attendance at a meeting in a regional campus, or hired room would suffice.

The DECs only retained their status for a brief period of about three years. Paradoxically, there are now a greater proportion of institutions involved in forms of distance education, usually as flexible delivery, than ever before. The reasons for this are several. There is a need for universities to find more sources of non-government income, especially in the postgraduate coursework area from which the Howard Liberal Government—which subscribes to an even more desiccated economic rationalist ideology than its previous Labor counterparts—is effectively removing its funding. The postgraduate coursework area has been expanding steadily with the largest component being in the professions and business. For example, Master of Education and Master of Business Administration courses are the most common. However, most universities would have few students if they only offered such courses as full-time and on-campus since working people generally need courses that are part-time and principally off-campus. In addition, the development of new computer and communications technologies has enabled universities to explore the creation of new educational technologies, especially those which facilitate interactive learning.

This is not to say that the terms 'distance education' and 'flexible delivery' are synonymous, or that practices in the late 1990s dual mode higher education institutions have not changed. It is difficult to say how the naming of a practice as 'flexible delivery' to make it symbolically different from distance education actually affected its practices. It is possible that it really did encourage people to think more about doing things differently or better for their students. However, any such influence would need to be assessed alongside the economic rationalist moves in education and training, together with the continuing rapid development of new educational technologies.

VET ROOTS

n the VET sector the drive towards flexible delivery has not come from a reorganisation of the provision of distance education, although that issue has been confused into it. Instead, the drive towards flexible delivery has resulted from the belief that the consumers of training can be better served with a product that is more relevant if they are viewed as *clients* of training providers, with all the privileges clients should have of professional services. Largely, those privileges have been viewed as associated with delivery of the right service in the right place, at the right time and at the right price. Flexible delivery has, therefore, been seen as a response to client requirements and not as synonymous with, or a substitute for, distance education. The tools and processes of distance education have been more clearly seen as available to flexible delivery, and part of the armoury, but certainly not as the same.

Flexible delivery has been enthusiastically embraced not only by VET authorities, but also by Industry Training Advisory Boards (ITABs), and by individual enterprises. Under the National Vocational Education and Training System Agreement, State and Territory Training Profiles are key planning tools, negotiated with the VET authorities in each State or Territory. These profiles include strategies for flexible delivery in terms of on-site delivery, communication networks, open learning centres, and the introduction of multimedia technologies. It is now commonplace for ITABs to champion flexible delivery in the workplace in the various Industry Training Plans (ANTA, 1996, 85). Among individual enterprises Henry and Smith (1998) have shown, in a detailed survey of SMEs in the Geelong region, that flexible delivery is by far the most favoured methodology for training delivery.

The inclusion in the conceptualisation of flexible learning of the notion of learner control over content, sequence, and length of time to complete the program are crucial components in the provision of learning programs to enterprise. Behind the inclusion of those notions in flexible delivery is the fundamental idea that it is learner (or customer) controlled rather than provider controlled. However, in the context of enterprise training, this raises the question of who is the learner and who is the customer. While the learner is likely to be an individual within the enterprise, that person may not be the customer. The customer is most likely to be the enterprise and its management. King (1996) has examined the language used in ANTA reports and concludes that the principal client is seen as the enterprise, rather than the individual learner. It is the enterprise which largely determines content and sequence, along with the length of time provided to complete the learning program.

Flexible learning or flexible delivery?

Cunningham *et al* (1997, 23) addressed the distinctions between open learning, flexible learning and flexible delivery. They suggest that open learning '...is an organisational approach which permits students, irrespective of previous credentials, to enrol in programs of study characterised by an element of student choice in relation to time, place and pace of study, and ideally in relation to mode of learning'. Flexible learning, Cunningham *et al* suggest, implies the same concept as open learning '...of student choice of modes of learning within a context of conventional requirements for prior credentials, and with a higher emphasis on the use of multimedia and communications technologies. They distinguish flexible learning from flexible delivery by suggesting the former represents a focus on student learning and student choice, while the latter is an administrative term representing a focus on the modes in which content can be distributed to relieve the time, place, and space constraints of on campus education. However, the Cunningham et al distinction between the terms open learning and flexible learning fail to capture the idea that flexible learning provides some learner control over content to provide for a more 'customer driven' approach to what is to be learned as well as how, where, and when. That is an important component in the conceptualisation of flexible learning, particularly in its application to the requirements of enterprises. Cunningham et al seem to distinguish the terms largely in relation to the mix of delivery methodologies and media.

Peoples, Robinson and Calvert (1997) observed that 'flexible delivery' encompasses two separate developments in VET. First, there is the demand by industry and employers for greater flexibility in the delivery of training and, second, there is demand for a more student centred approach to learning and teaching. Peoples, Robinson and Calvert proposed a different definition for each of flexible delivery and flexible learning:

> Flexible delivery is managing and organising vocational education and training programs/courses/modules in ways that meet the needs of clients - industry, enterprises and learners; and,
>
> Flexible learning is planning, developing and facilitating a range of learning strategies that meet the needs of individual learners. Peoples, Robinson and Calvert (1997, p8).

The definition Peoples, Robinson and Calvert use for flexible learning may be better applied to the term flexible teaching. The acts of planning, developing and facilitating are not the acts of a learner, but those of a teacher. It can be argued that flexible learning is the result of flexible teaching, without suggesting that flexible learning can only occur as a result of flexible teaching. Flexible learning may be the result of a self directed study program, problem solving situation, or just the actions taken to satisfy an individual curiosity. Flexible learning may also take place in the context of a very rigid teaching paradigm, where the learner invokes a flexibility not provided for in the instruction. Adoption of the term flexible teaching enables the brief insight that flexible delivery is the application of flexible teaching to a particular teaching task or situation.

Conclusion

In this paper we have examined the origins and development of the terms *flexible delivery* and *flexible learning* in the higher education and in the VET sector. In higher education the terms are more traceable to distance education and the need to be seen to serve changes in government policy that limited institutional involvement in distance education. In the VET sector, the methodologies of distance education have been acknowledged as part of flexible delivery, but the policies and practices of flexible delivery have developed in response to government policy shifts that have demanded greater client (largely industry and enterprises) control over training content and methods.

The different origins and developments have resulted in a fundamental difference between the two sectors in their conceptualisation of flexible delivery. The fundamental difference is that, central to the VET conceptualisation, is the notion of client control; while in the higher education sector the conceptualisation is more about the delivery of university developed and controlled courses of study to students in such a way that they can study where and when they wish. However, they continue to study within a semesterised framework, and to study content determined by the university, albeit with industry advice.

The difference between the two conceptualisations is fundamental and needs to be understood. It is unlikely that meaningful higher education/VET discourse on flexible delivery can develop without understanding the differences. Peoples, Robinson and Calvert (1997, 6) have made the point that where the concept lacks precision, implementation will be difficult.

Finally, it is one thing to explore and acknowledge the differences between the higher education and the VET sector in their respective understandings of *flexible delivery*, but another thing entirely to contemplate the many conceptualisations that must exist among the enterprises that form the client groups.

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A RESEARCH JOURNEY

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ABSTRACT

Honouring the diversity of perspectives and acknowledging our own in an inquiry is the easy part - dealing with it is quite different! This paper shares with you my research journey as I blended research philosophy and methodologies to investigate the question *How do you nudge a culture towards self-managed professional development?*.

Introduction and Background

I embarked on my research journey with the question *How do you nudge a culture towards self-managed professional development?*. The question emerged in response to TAFE NSW Institutes seeking appropriate strategies to support the Professional Development Scheme (PDS). The PDS was implemented across TAFE NSW in 1996. The underpinning principle of the strategy was for educational staff to take responsibility for identifying their learning needs, strategies for learning, and the development of personal learning plans and professional portfolios. The strategy however, failed to involve staff in the process of self-managed learning, and seemed to have failed to achieve its intent.

> Between the idea
> And the reality
> Between the motion
> And the act
> Falls the Shadow
>
> Between the conception
> And the creation
> Between the emotion
> And the response
> Falls the shadow (From The Hollow Men by T S Eliot)

Based on the premise that organisational learning is not a purely individual process but rather an ongoing process within a learning community, traditional staff training and development strategies such as face-to-face workshops are no longer considered the most appropriate. More collaborative approaches to learning such as action learning, mentoring, learning partners, and workbased learning strategies are being implemented. These strategies require individuals to become comfortable with challenging, as well as being challenged, and to become more reflective practitioners. Senge postulates that one of the identifiable characteristics of an organisation which is learning is ... *a difference in the quality of dialogue* (1994,31).

The assumption underpinning the research question was that some staff are not engaging in dialogue, are not planning their own learning, and are relying on being 'told' what they need to learn and how they should go about their learning. This was incongruent with the new paradigm of teaching and learning being implemented across vocational education and training - that of flexible learning.

The merger of School Education and TAFE NSW into the NSW Department of Education and Training provided a unique opportunity to develop this concept in students moving through the educational system, from primary to tertiary. It is considered critical that staff shares this commitment and is able to model the process.

The involvement of another public department and an industry partner would draw on the experiences of the different sectors to develop a supportive framework for professional development. To this end, two other organisations were invited and agreed to participate.

Aim of the Project

The overall aim of the project was to develop a framework for public and private organisations to support self-managed professional development, and hence a commitment to lifelong learning. Building the framework was to be done collaboratively, drawing on the creative ideas of the research participants, and the findings of a literature review.

The Research Group

A Research Group was formed comprising representatives of the three organisations targeted in the scope of the project. The Research Group was to work as a collaborative inquiry group in designing the methodology, undertaking the interviews, leading the Focus Group meeting, synthesising the data, and compiling the report.

The Design

We agreed to use a participative qualitative research approach based on our alignment with a Constructivist paradigm.

The project was divided into two distinct phases - Finding Out and Testing Out.

PHASE I – FINDING OUT

The Literature Review

A full literature review was done focusing on self-managed professional development and the culture of lifelong learning and included both current and former research done nationally and internationally .

The Methodology

A Hermeneutic Dialectic Process methodology was chosen to gather data in Phase I.

> The hermeneutic aspect consists in depicting individual constructions as accurately as possible, while the dialectic aspect consists of comparing and contrasting these existing individual (including the inquirer's) constructions so that each respondent must confront the constructions of others and come to terms with them. (Guba 1990, 26)

The selection of this methodology was based on the belief that each of us (the inquirers and the inquired) brought our own interpretations to the project. This method allowed us to interpret data in a collaborative and communicative manner,

> with the aim of generating one (or a few) constructions on which there [was] substantial consensus. (Guba 1990, 27)

The technique used was informed by the hermeneutic circle model depicted by Guba and Lincoln (1989, 149-155), as follows:

Firstly, the Research Group identified our own constructs by answering the strategic questions being given to respondents. Our individual constructs served as a reminder of our own subjectivity and were checked as each of us 'wrote up' our interviews.

There were two circles of interviews: In the first circle, three respondents - representing a range of stakeholders and viewpoints on professional development - were selected to be interviewed by each member of the Research Group. Eighteen interviews thus took place.

Strategic Questioning (Peavey 1992) was used in the interview process to allow the 'bigger' picture to emerge, and then a move towards the identification of possible action/s at an individual level to take place. The strategic questions were:

The General Environment: What do you see? What do you know? How do you feel?

The Vision: How could it be? What needs to change?

> Whatever you can do.
> or dream you can, begin it.
> Boldness has genius,
> power and magic in it. (Goethe)

Strategic Planning: What can you do? What support do you need?

Using a hermeneutic dialectic process, the interviews proceeded as follows:

The first interview was conducted using the strategic questions above. At the conclusion of the interview, and after 'writing up' the interview, the respondent was asked to verify that what had been written was an accurate account of what they said, and data was corrected if necessary.

The second interview was with a staff member whom it was considered, by the inquirer or by the first respondent, had a differing viewpoint on the research question. Strategic questioning was again used to capture the data, and at the conclusion of the process, the views of the first respondent were shared (without identification) and the second respondent was asked to comment. These comments were captured. The second respondent verified the 'written up' interview.

The third interview was again with a staff member who might, or might not, have had a differing viewpoint to the first two respondents. The same process as with the second interview was followed, but this time the respondent was asked to comment on the constructs of the first two respondents. Again, the third respondent verified the 'written up' interview.

In some instances narratology was used when respondents chose to email their professional development stories.

Data collected from the 18 interviews was analysed for common themes and major differences. Each participant in the first circle was given a copy of the synthesised data, to remain part of the feedback loop.

The second circle (another 18 interviews) used the same process as for the first but had the added dimension of respondents being asked to comment on the emergent themes of the first circle.

At the completion of the second circle, data was again synthesised to capture emergent themes and differences.

The Focus Group

Each participant in the circles (36 in total) was invited to participate in a focus group meeting. Eighteen participants plus another seven interested staff members across the three organisations joined the Focus Group meeting.

The emergent themes/differences were given to participants with the aim of developing a possible framework to support professional development, with identified action/s to be tested out in Phase II.

PHASE II - TESTING OUT

Phase II is currently under way and involves the 'testing out' of the ideas captured in Phase I.

An Action Research process is being used to test out the different components of the framework within sample groups across the three organisations.

The Research Group is continuing to meet throughout this phase to share findings, reflect and make changes if necessary, leading towards a more refined framework to support professional development, and lifelong learning.

The findings of Phase II will be merged with Phase I into a final project report and disseminated to key stakeholders.

Reflecting on the Journey – A Personal Perspective

In reflecting on the journey, five issues emerged as having significantly impacted on me as I travelled the windy research road. They were -

1. the power of strategic questioning as a research technique
2. the search for certainty
3. the commitment of participants in a collaborative inquiry group
4. the presumptuousness of the research question itself, and
5. the emergent question.

STRATEGIC QUESTIONING

The Research Group chose to use Strategic Questioning (Peavey 1992) in the interviews. We felt that this would allow the respondents to tell their 'story' by first sharing with us what they saw and how they felt. By then being asked how it could be they were able to create a vision. And finally, they moved from the macro environment towards taking action by being asked what they could do and what support did they need.

Focusing on the general environment elicited much negativity towards the organisation and its commitment to professional development. It allowed participants to share with the interviewer their perspective of how it is and how they felt about it. Being given the opportunity to share their vision provided a shift in focus - they moved from the negative towards the positive. And finally they were able to say how it could be done - what was achievable within their vision - what they could do and what support they might need.

The questions asked were open allowing the stories to emerge, rather than seeking responses to specifically designed questions tailored to meet the perceived needs of the researcher. And the responses were varied and creative. Certainly, as a professional development specialist, I found new and exciting ideas emerging.

There is no doubt that the use of strategic questioning moved respondents from feelings of much negativity towards positive action. The mood in the interview often changed from fairly withdrawn responses towards stimulated conversation.

And so, through this positive research experience, I intend promoting strategic questioning as both a research technique appropriate for a qualitative approach to research methodology, and as a powerful 'tool' to promote dialogue and support change.

THE SEARCH FOR CERTAINTY

In deciding on a qualitative research methodology, I was aware of the need to ensure the validity of the findings, and to be able to argue for the acceptance of them as such based on the research technique used. The hermeneutic dialectic process was chosen because it required the perspectives of the different stakeholders to be fed back for verification, and for all the perspectives to be exposed to all the stakeholders for comment and feedback. This allowed the stakeholders to verify what had been said, and to have input from beginning to end. (Guba and Lincoln 1989, 245). The criticality of the feedback loops was also stressed by Heron (1981, 160).

The tension arose for me when I began to make sense of the data gathered. This was partly caused by the inability of the Research Group to do this with me because of other commitments. It therefore became my task to capture the emergent themes from the interview stories and present these to both the Research Group and the research participants for interpretation.

It was intriguing at first to note that the constructs of the research participants weren't all that different, even though we had deliberately set out to interview staff from different levels of the organisation, and with different perspectives on professional development.

I started to feel on shaky ground - had we interviewed a broad enough sample of staff? Were the emergent themes my interpretation of the data gathered and not truly representative? My constant seeking of feedback elicited very little response - surely I couldn't be that right all the time!

My fears were allayed somewhat when we held the Focus Group meeting, which brought together the Research Group and some of the research participants. The Focus Group went about the task of interpreting the data and it was my job to capture their interpretations, feed them back after the event for verification, and include them in the final report. Still no disagreement!

I'm obviously not feeling totally comfortable with the findings. I know that the process is valid and that every attempt has been made to seek the feedback for verification, but how valid is it when you don't get the sought feedback?

I'm also wondering if the paradox of a collaborative inquiry is the consensus gained - I keep seeking a challenge to the final interpretation through the process and am nervous that silence doesn't necessarily mean agreement. Why are they silent? What is it about silence which bothers me so?

THE COLLABORATIVE INQUIRY GROUP

Participating in a collaborative inquiry group proved to be the most frustrating aspect of this research project.

I have stopped and considered my own perspective on commitment throughout this journey, and have asked my colleagues to give me theirs. I know that I enter teams with a commitment to participating fully and completing the tasks assigned to me. It seems I have this expectation of others to do the same and I have trouble dealing with the inevitable - the different levels of commitment which become evident throughout the life of a project. I need to learn to deal with this I know, but through numerous similar experiences I continue to be frustrated by it. How can I deal with this better will remain a continuing learning for me!

This research project was no different. I was very excited when I first began to formalise my research project, identify the criteria for participation in the Research Group, and form the Group. It seemed that my criteria was very much aligned to that developed by De Venney-Tiernan, et al (1994, 120-137).

My first hurdle was actually forming the Group. Many colleagues expressed interest in participating, but very few were prepared to commit the time. I concede that their time was already stretched to the limit with many other organisational demands on them.

Finally a group of seven was formed. Finding a common meeting time proved to be the next hurdle - all seven participants had very full diaries! The first meeting did take place but perhaps the fact that only four of the seven were able to be present did not auger well for the collaborative process I had envisaged. However, that first meeting proved exciting for all present as we began to map out the process.

By the second meeting the seven members had reduced to six - we lost a critical member again not from lack of interest, but lack of time!

I accept that participation in project teams very much depends on priorities and members of the teams do not always set these. However, I struggle with the dilemma of reprioritising when it affects the meeting of deadlines and the workloads of others.

I had envisaged a truly collaborative process in regard to both the Research Group and the research participants. Certainly a process of consultation has been achieved, but I admit to driving the project, presenting the process, the initial 'making sense' and the report writing. Throughout I have sought agreement but have made few changes to data or process, not because of lack of preparedness to do so, but rather through lack of feedback. Most feedback has been received from the research participants as part of the feedback loop rather than from the Research Group.

I believe yet another research question has emerged - what conditions need to exist for full participation in collaborative project teams? I'm sure this question isn't new for those more experienced than I!

THE PRESUMPTUOUSNESS OF THE RESEARCH QUESTION

The assumption of how staff were meeting their learning needs was challenged a good deal through the research process.

If I reflect on my own endeavours, as a staff member of my organisation, to map out my learning needs, identify learning strategies and immerse myself in the learning, I present a fairly intense involvement with professional development. I have completed three postgraduate programs. My job requires me to be knowledgable about current research into professional development strategies and methodology. I thus attend seminars and conferences, network with key contacts both nationally and internationally, read a variety of articles and journals relating to professional development, and 'test out' ideas as part of my practice. Why did I think others were different to me? What assumptions were I making about others and myself?

I'm embarrassed to say that I obviously didn't think that all my colleagues were as committed as I - at least I didn't see any evidence of it, but had I been looking? How arrogant!

As I went about my part of the research process and began interviewing participants from different parts of the organisation, I was very much enlightened! I heard exciting stories about the different areas of study staff were engaged in, both formally and informally.

One such story emerged when the interviewee mentioned that they hadn't 'done' any professional development since they had acquired their teaching qualification. Being in TAFE NSW, it prompted me to ask how they remained abreast of what they were teaching, ie their technical area of expertise. I was then exposed to a variety of professional development techniques used by the interviewee to maintain currency including participating in a community group on a voluntary basis, searching the Internet for the latest technical information, discussing key journal articles with colleagues, and learning from their students as they shared what they did in the workplace. This story was similar to others shared in the research process.

It highlighted, for me, two factors. Firstly, not being seen at 'formal' professional development activities does not constitute a lack of responsibility for one's own learning, and secondly, the lack of recognition of one's learning by both the individual and the organisation. In the instance above, the interviewee had at first made the statement that they didn't engage in professional development, and there didn't seem any recognition by their colleagues, supervisor or management that they did!

It was exciting to hear the stories unfold, and even more so to have my assumptions found wanting.

THE EMERGENT QUESTION

In teaching and learning, one of the most fundamental requirements is to ensure a common understanding of the topic itself - what is it all about? The focus of this inquiry was professional development and, although the Research Group was aware that professional development could mean different things to different people, we decided to see what emerged rather than attempt to define it up-front.

Along the way we were asked what is professional development? Is it the same as staff training and development? Can personal development be classified as professional development? and so on.

Within the Focus Group meeting some tension arose as one group wanted to have a clear definition of professional development. Others, including myself, felt to define professional development was to restrict it. We worked towards developing a shared understanding. Perhaps though, the next research question has been identified - What is professional development?

> What we call the beginning
> Is often the end
> And to make an end
> Is to make a beginning
> The end is where we start from (T S Eliot, source not cited)

THE CONCLUSION OF A JOURNEY

This research project provided me with a fertile learning environment as I explored the different perspectives and reshaped my own mental models as my assumptions were constantly challenged. It was a rewarding and fulfilling experience. I set out to 'find out' and truly achieved this both personally and professionally.

My need to blend paradigms at different stages of this research project highlighted the dichotomy of a constructivist paradigm as I slipped in and out of a search for certainty throughout the journey. I wanted to allow the stories to emerge, but struggled to allow them to be heard without validation!

I still wonder about the validity of the findings if research participants related their stories about something that they each interpreted differently, ie their understanding of professional development. The different interpretations were to be expected of course - our different world views allow the diversity of interpretations to exist. But do the findings represent the differences? However, a positivist approach to this research would not have recognised the different perspectives at all!

I wonder if, apart from the more concrete research methodologies such as quantitative research that may not rely on human interpretations, data gathered can ever be considered truly valid. I wonder. Of course, from a constructivist paradigm it can't, or it can!

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A HIATUS IN VET RESEARCH: THE CASE OF MATHEMATICS

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ABSTRACT

To support industries to be at the cutting edge, the VET system must prepare workers appropriately through recognition of the critical importance of mathematics which operates in a dialectical relationship with technology. A healthy research base in vocational mathematics education is needed to inform policy decisions on curriculum and teaching.

A View from the Margins

I establish my positionality as a TAFE teacher, specialising in mathematics and statistics subjects, and a Ph. D. research student. Some four years into my studies, I have come to the realisation that my research is at the margins of both mathematics education and vocational education. At the institutional level, it is becoming apparent that teachers do not feel valued *qua* teachers, even less as researchers.

A FOCUS ON MATHEMATICS EDUCATION

Focusing on the *discipline* of mathematics, a small number of graduates will find employment in the academy, a larger number will find work in industrial research and development, and an ever-diminishing number (Thomas, 1997) will find work as teachers of mathematics. Currently in Victoria many people teaching school mathematics have few or no university qualifications in mathematics (Swedosh, 1998). A small number will undertake research in mathematics education; some will be employed as researchers and/or teacher educators. Current work in the academy and industry has minimal effect on both teaching and mathematics education research segments which focus on a small subsection of teachable material, generally located in mathematical developments made well before the twentieth century — from Ancient Greece which dealt with number as magnitude, and the latter from Modern Europe (from around the seventeenth century) which dealt with number as an object of pure thought, focusing on the concept of function (Spengler, 1926).

The institution of mathematics *teaching* — taken as the work of teachers together with related texts and teaching materials (electronic and concrete), subject associations, conferences, journals, and so on — is virtually entirely concerned with the needs of children from early learning to the end of formal schooling; with a tiny effort made on behalf of university teaching, particularly in the bridging area. In Australia, and to a lesser extent internationally, the needs of teachers of mathematics subjects in VET are all but ignored (with the exception of further education courses coming under the literacy umbrella).

The situation for mathematics education research is very similar. For example, Paul Ernest (1998) identified some of the objects of mathematics education research — with a distinct focus on school mathematics. He included as primary objects the nature of mathematics and school mathematical knowledge, its learning, aims and goals, teaching, resources, the human and social contexts of mathematics learning/teaching — and the interaction and relationships between all of the above factors. At another level, the objects might be taken to include: the nature of mathematics education knowledge, research, teacher education, and the social institutions of mathematics education.

There is no reason to exclude post-compulsory education from research perspectives such as this. However, the teaching of university mathematics has been formally addressed in Australia through a discipline review (NBEET, 1995) and internationally (e.g., Niss, 1997). FitzSimons (1996) and in a timely research publication on adult learners FitzSimons and Godden (in press) document examples concerning the teaching and learning of mathematics at university. But in Australia, apart from the work of the author, there is little equivalent published research pertaining to the VET sector.

A FOCUS ON VOCATIONAL EDUCATION

Industry is, not surprisingly, central to vocational education. However, it is only in the last decade that, as part of a sustained effort of deprofessionalisation on the part of governments adopting neo-liberal policies, deliberate efforts have made teachers peripheral in terms of decision-making. Clearly industrial experience is important for teachers of vocational subjects, but it has not always been mandatory for teachers of generic studies such as mathematics and communication skills. Funded industrial experience has been available to teachers but the task itself may be subverted into other work on behalf of the college.

Teachers' work in the VET sector has been transformed and intensified by the marketisation of education together with erosion of working conditions, so that there is little time and energy left for preparation (and innovation) for classroom teaching. There appears to be little status attached to the work done in and for the classroom, where the quality of teaching appears to count for little. Generic studies such as mathematics and communication skills appear to have fewer restrictions on increasing class sizes or location of teaching rooms. In fact teachers with no pedagogical preparation in these areas, nor even any relevant tertiary qualification, are known to be assigned to these classes in order to fill up a teaching load.

From NREC's (1997) six key priority areas for the VET sector it would appear that issues of teaching and learning, covered by the phrase *quality provision*, are of recognised but limited importance, and in any case, taken to be generic. My contention is that these are central issues on which all others depend. If teaching skills are generic how could one account for the establishment over the last three decades of the field of mathematics education research (Niss, 1998)? The strategy's planned investigations are all contextually situated and cannot be generalised for all students (even groups of students), teachers, and sites of learning.

Thus, as a TAFE teacher of mathematics subjects and a VET researcher, I am positioned on the margins of both the mathematics education community and the vocational education community. Yet I am both insider and outsider: working within both realms yet looking in on each from the perspective of the other. Fortunate, perhaps, that I have voice in each as practitioner, producer of peer reviewed publications, and leader of working groups, nationally and internationally. But still, always on the margins.

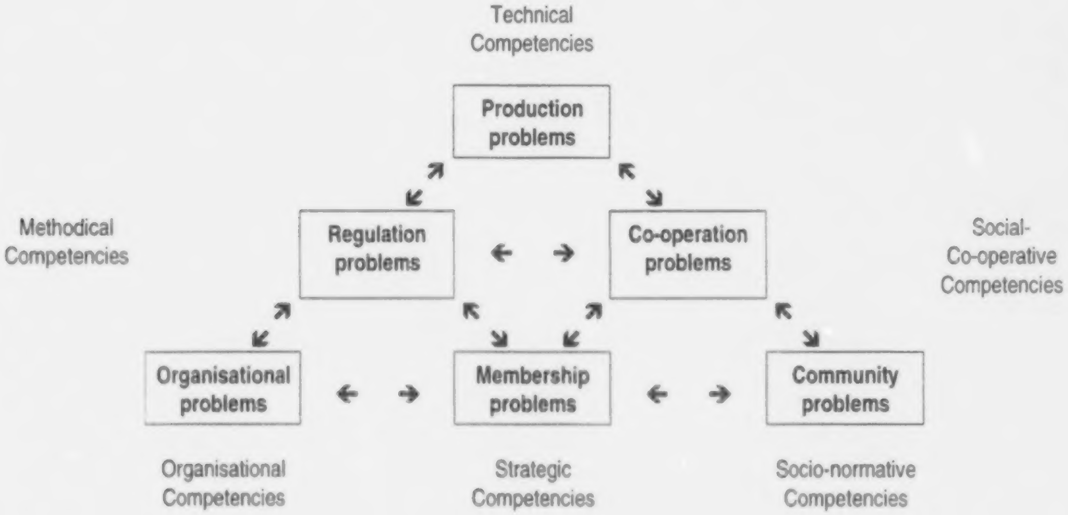
This paper, then, is looking at VET practices from the perspective of an insider (i.e., a practising teacher) who is also engaged in mathematics education research. Following the work of Anna Yeatman (1994), having begun to consider the epistemological positioning of myself as a subaltern intellectual and the different and conflicting lines of intellectual and political accountability, I wish to defend the values of professionalised (mathematics and vocational education) knowledge, to offer critical and reflective perspectives.

Mathematics Education in the VET Sector

Mathematics has a very high public profile. Niss (1994) noted the subjective irrelevance paradox where mathematics was regarded as generally important but not at the personal, subjective level. Media reports about proposed changes to school mathematics are usually greeted with major public interest. Somewhat surprisingly, mathematics in the VET sector is never mentioned, apart from recent publicity given numeracy and literacy tests for the unemployed. In an increasingly technological world mathematics is held to underpin a nation's industrial competitiveness and generally support the quality of life (NBEET, 1995). However, Niss's paradox can be related to the dilemma posed by Chevallard (1989), that while more and more mathematics is implicitly built into all aspects of social life the amount actually made explicit becomes less and less. For example, the mechanisation and computerisation of almost every facet of our lives. One result is the tendency among members of the public, including some industry spokespersons, to believe that there is a diminishing need for formal mathematics education in the VET sector. However, this is a superficial view. Industry-based research suggests that when workplace decisions become problematic or contested, mathematical skills far broader than basic numeracy are required (see FitzSimons, in press-b, for a review of the literature).

Onstenk (1998) has elaborated a broad range of workplace competencies: in addition to technical competencies for production are a range of methodical and communicative skills for working within an organisation, interacting within and between various communities of practice (see Figure 1).FitzSimons (in preparation) and Wedege (in press) elaborate on these and how they are inextricably related to the mathematics education of the worker. Democratic competence is needed not only in the workplace, but also in the wider community, where mathematics and its models (e.g., percentages, graphs and charts) can be used as means of encouragement or discipline and control. In fact it can be argued that the Key Competency *Using Mathematical Ideas and Techniques* is interlinked with each of the other Mayer Key Competencies, problematic as they might be. Figure 1 shows Onstenk's (1998, 100) conception of competence, which he built on the activity theory approach of Engeström.

Figure 1. Core problems and broad professional competence (Onstenk, 1998).



MATHEMATICS CURRICULUM AND TEACHING

The curriculum and teaching of mathematics in the VET system is basically in an educational (epistemic and pedagogical) time-warp, when it could and should be at the cutting edge, unhindered by restrictions of massive public examinations and access to positional goods in education and (most) industry. Little is known, and much is assumed by curriculum decision-makers about the actual uses of mathematics in industry (not to mention society at large). Yet there is a burgeoning of research reports (FitzSimons, in press-b) in this area.

There have been two disturbing tendencies concerning mathematics curriculum and teaching in the VET sector. The first is that most formal accredited curricula concentrate on a narrow range of technical mathematics competencies, albeit in CBT format. There is an essentialism in content and process, not dissimilar from the content of much school mathematics, with the inclusion of spurious *vocational* contextualisations which are by-passed by the students as they seek to find the closed solutions. School mathematics in recent years has attempted to incorporate more realistic mathematical processes of problem solving and modelling, with limited success and much opposition: the very thought processes used by mathematicians and which should be valued by industry have not been seriously addressed in VET mathematics. Teaching is generally based on a, transmission paradigm, adopting a simplistic tool-box mentality, where students learn a set of disconnected de-(re-)contextualised skills in the classroom and are expected to identify applications in a work situation — shown by Billett (1998) to be highly problematic. The sector has also been slow in adopting new technologies (e.g., calculators, graphic calculators, and computer packages) as a teaching medium or tool-of-trade — let alone as on object of critical study. In FitzSimons (1997) I discuss the impact of this narrow curriculum with particular reference to gender, and in FitzSimons (in press-a) I discuss my attempt to work around the difficulties in workplace education. The situation is exacerbated for students who are enrolled for flexible delivery through distance education methods, since this mode is recognised to be extremely challenging for even well motivated students who have good time-management skills, to say nothing of literacy levels (Misko, 1994).

The second trend is towards reduction in amount of mathematical content. As courses become reaccredited or transformed into training packages, reductions have become apparent. On one hand it might be argued that mathematics, as described above, is not seen as relevant by students (and possibly industry spokespersons). On the other hand it is frequently argued that the educational backgrounds of vocational students are becoming weaker — due to the combined effects of higher participation rates in post-compulsory education and the push by undergraduate courses to increase their student numbers to the detriment of the lower status TAFE courses. Although the trend in both TAFE and university sectors is towards making students responsible for their own educational outcomes, the university sector in Australia and overseas is addressing the problem by attempting to improve its own teaching (NBEET, 1995; Niss, 1997, 1998), supported here by well publicised grants. Arguably TAFE students are in need of better mathematics teaching than their university peers, yet the issue has been treated unproblematically. Yet, at the technician level there is likely to be close professional interaction between TAFE graduate and university educated researcher, and they must be able to communicate mathematically. In fact the content of some courses overlaps, especially in statistics and mathematics for high technology areas. The NBEET report argues for university mathematics (and statistics) to be taught as an active, laboratory subject, and there is evidence that this is occurring. How many VET mathematics/statistics courses are taught in this manner? This situation in VET is not helped by the disappearance of discipline studies: In Victoria there are no longer any mathematics departments and therefore no career structures for discipline experts; not even to encourage multi-disciplinary strategies among the various subject experts.

Another important silence in the VET sector is the issue of student attitudes and beliefs towards mathematics — not to mention their teachers'. I wonder how many teachers in the VET sector hold and impart philosophical views of mathematics as an infallible, absolutist discipline?

In summary, the sector has paid little attention to the results of research in the international mathematics education community and has, to my knowledge, failed to carry out its own programs for the improvement of mathematics teaching and learning.

PROFESSIONAL DEVELOPMENT

Professional development for VET teachers of mathematics remains an important issue. In Victoria there has been no systemic professional development for mathematics teachers. With changes to TAFE structures in other states, even those more fortunate are likely to experience a deterioration with the devolution of responsibility for professional development to individual providers. What happens for mathematics teachers working for small private providers? At the same time there is now no educational qualification requirement for new teachers, in Victoria at least. What other industry would survive under such unfavourable conditions for self-renewal and development of innovation?

GOALS OF VET MATHEMATICS

In addressing content it may appear that I have overlooked discussion of the goals of VET mathematics. Internationally this is a major issue for school children (Niss, 1996), and more recently, perhaps, for university students (Niss, 1998). Where is the debate about the descriptive/analytic positions on content and pedagogy (or andragogy)? Could we ever have a debate on the normative positions? This seems unlikely in the current climate.

Arguing that the curriculum is *neither* free from *nor* determined by the economic and political space in which it operates, Noss (1994) suggests asking how mathematical ideas fit with society, and encourage particular ways of seeing, particular ideologies. In FitzSimons (1998) I interrogate some of the reasons in support of the continued low-level provision of mathematics for VET students. There may well be certain interests served in producing graduates who are obedient, docile, dualistically-oriented, rule followers rather than creative questioners.

Research

Internationally there are governments actively encouraging research into mathematical and technological needs of their vocational and further education adult learners. Whereas mathematics-discipline research is generally sponsored by large business and industry interests, as well as by government for areas such as defence, education research has been more geared to answer questions of political relevance. This apparently does not include mathematics in VET, and so there are silences about curriculum and teaching.

In the devolution of responsibility for curriculum and professional development to institutions one consequence is that mathematics tends to become invisible (e.g., courses in two- and three- dimensional art and design do not address mathematics directly) or not problematic (e.g., existing mathematics courses are simply transferred on-line). Hence it is an unlikely candidate for research.

Another consequence is that, because of the emphasis on user-choice, it is courses or institutions which are evaluated, not the teaching of mathematics and communication skills subjects per se, critical as these may be to completion and workplace communication. Thus there is little incentive for these to improve, or even be problematised. Related to this issue is the decline in large-scale government employment of TAFE educated apprentices and technicians (e.g., Gas & Fuel Corporation, State Electricity Commission, Telecom). Such large groups were, in the past, able to influence providers who had reputations to defend in terms of quality of teaching.

The VET system prides itself on being responsive to industry needs (even if not clearly articulated, especially in the case of mathematics), which presumably includes proactive as well as reactive strategies. The continual reproduction of an epistemologically flawed curriculum framework founded on school mathematics, and the failure to recognise the genesis and use of mathematics in the workplace or to seriously address the issue of transfer indicate the hiatus in VET research. To provide adequate curriculum and teaching in times of rapid economic change, the system needs to adopt innovative strategies, supported by sound educational research, to monitor and evaluate theoretically well-founded approaches in discipline areas such as mathematics for vocational education and training. These are currently lacking in focus where research funding is concerned.

A RESEARCH AGENDA

The VET sector needs to pursue ongoing critical, research-based, analysis and evaluation of teaching and learning mathematics. For example:

What is known about:

1. Students' mathematical backgrounds?
2. Teaching and learning practices in classroom, workplace, and on-line?
3. Teachers' (of mathematics subjects) mathematical and educational backgrounds; professional development records?
4. Industry's real mathematical needs (not lists of school mathematics topics)?
5. The mathematical needs of society at large for democratic citizenship?

Further research questions, including theorisations of the above, include:

1. Is mathematics important in Australian vocational education and training?
2. Can we continue with a simplistic 'tool-box' mentality to teaching mathematics?

3. How can we engender higher order thinking in mathematics classes and mathematical situations at work and in general?
4. What are the links between mathematics education and productivity?
5. Who is responsible for the conditions of mathematics teaching (i.e., institutional constraints faced daily by teachers).

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WHAT IMPACT IS IMPLEMENTING A QUALITY SYSTEM HAVING ON THE VET CLASSROOM?

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ABSTRACT

This paper will report on research into whether implementing quality systems is having an impact on the teaching/learning process in TAFE Institutes. The research used a case study approach as well as a review of literature and current findings from workshops conducted by educators who use quality tools and principles in the classroom. Preliminary findings indicate that there was a mixed response from teachers regarding the value and impact on the classroom of implementing quality. This is due to various interpretations of the term 'quality' as well as the fact that the VET sector has experienced a number of fundamental changes and new initiatives, which have all, had some impact on teaching and learning. The conclusions reached in this paper are that if quality is to have an impact on the teaching/learning process, we need to

- mould the definition and principles of quality so that they are closer in meaning to the main activity of the sector - learning;
- learn from the quality framework for VET and apply it in the classroom : the class is the organisation, the leader is the teacher, the people in the organisation are the students and the teacher/s and the customers are those who benefit from the student's work;
- bear in mind that improving learning is the bottom line for training organisations and whatever we do with quality should lead to improved learning.

Tooley and Darby (1998) examine educational research to assess whether it:

- makes a serious contribution to fundamental theory or knowledge
- is relevant to practice
- is cumulative - that is whether it is coordinated with any preceding or follow-up research.

Given the theme of this second AVETRA conference is quality of VET research, I would like to suggest that the three criteria Tooley and Darby use be the starting point for assessing the research that is described in this paper .

Rationale for the project

Hagar (NCVER, 1997) noted in his review of research into quality assurance in VET that most of the research relating to quality in the VET sector was concerned with the business of setting up quality assurance measures and was therefore developmental, rather than evaluative.

The purpose of this paper is to report on a piece of research which was designed to contribute to the evaluative research into quality. The project conducted by NCVER aimed to examine the impact that implementing quality initiatives was having on the teaching/learning process in the VET sector.

Guest (Q Magazine, OTFE, 1997) noted that :

> It was generally recognised in the US that the use of quality principles should not be confined to the administration/management area, but should be integrated in to the core business of teaching and learning.

Kable (the Quality Magazine, October 1997) echoed this view stating that:

> . . . to gain maximum value from an imposed quality system, it must be structured around the processes that drive the business'.

Many VET practitioners believe it is premature at this stage to be examining and seeking to measure the effects the development and implementation of quality systems are having on the quality of the teaching/learning experience. They hold this view because the primary effort at the start of a quality journey is generally directed at applying the quality principles to the management of the organisation and this has been the primary focus of the quality framework for VET developed in each State and Territory. Furthermore, quality as a term is problematic because it means different things to different people.

Methodology

The project drew on non-empirical research in the form of literature published in the field of quality in education as well as current work by practitioners who have established reputations in the USA for their work in putting quality principles into practice in the classroom. The project also involved qualitative research in the form of questionnaires and interviews with quality managers, head teachers and teachers in 8 Institutes of TAFE in New South Wales, Victoria, Queensland, South Australia and Western Australia. The 8 institutes which took part in the study all had been recognised publicly for their commitment to quality and for progress they had made on the quality journey. These organisations were those which had been recognised through the Australian Training Awards (administered by Australian National Training Authority) and the Australian Quality Awards (administered by the Australian Quality Council).

The reason for selecting these organisations was that since these organisations had gained an award for their commitment to quality, they would have been on their quality journey for some time and it could be expected that the impact of quality was filtering through to the learning environment.

The preliminary research for this national project was conducted in early 1998. Given the fact that this research topic was considered by some to be premature in that the VET sector had been in a change of flux and change since the early 1990s and given that implementing quality was a relatively new concept within the sector, there was hesitation about using the available quantitative measures when assessing the impact that implementing quality may be having on the quality of the teaching and learning experience. Quantitative measures such as participation rates, module completions, employment of graduates, satisfaction of graduates, number of graduates who returned to do further study provide an indication of the performance of the VET sector, but they are not the type of data from which to draw conclusions about the quality of the teaching/learning process at the institute level. Furthermore, there are protocols and sensitivities about using institute level data in national studies.

Another option was to compare data over time within the one institute. The problem with this approach was that there have been so many changes in the VET system - such as restructures and mergers of colleges into larger training organisations and the shift to a competency-based approach. Thus comparing participation and outcome data such as module completions and graduate destinations over time could be meaningless. Moreover, many institutes have not been collecting this type of data for very long in a systematic way.

The approach that was adopted was to go direct to teachers in the first instance to find out from them what impact they felt implementing quality was having in the classroom. This was achieved by selecting a range of training organisations to visit, sending out a preliminary questionnaire and then arranging to meet with groups of 8-10 teachers to discuss whether they felt implementing a quality system was having an impact on the teaching and learning experience they offered. A total of 117 staff from TAFE Institutes took part in the study.

These teachers taught a range of courses covering Diploma level, Associate diploma level, and Certificate I - IV as well as general access and equity courses. The teachers represented the full range of fields of study and included trade and non-trade: general trade areas, community health, business, manufacturing, information technology, foundation education, . communication skills, animal care, electrical engineering, horticulture, aged care, workplace training and assessment, arts, health and safety, childcare.

100 of the teachers taught classes of 11-20 people or more - only 7 taught smaller classes. 104 of the teachers consulted used mainly classroom-based, teacher directed with some self-paced delivery. 15 teachers indicated that they also used workplace-based delivery strategies. The predominance of classroom-based delivery is reflected in national VET statistical collection: 1997 data reveals that 86% of modules were delivered using classroom based teacher directed and self-paced delivery strategies. (unpublished statistics, NCVER)

Another angle that was pursued was the non-empirical angle - reading the literature to find what other researchers are saying about quality and its impact in the classroom. This phase also involved attending conferences and workshops presented by educators such as Myron Tribus and David Langford, both from the USA who are contemporary thinkers and practitioners who have made their current careers from putting quality principles into practice in the classroom and who take time to share their ideas with other teachers.

Defining quality

Crucial to the consultations with teachers was to find out what they understood by the term 'quality'. Quality has become a short hand term that is used to describe a set of features or attributes, a philosophy/a way of thinking and an approach to management.

Heywood (1998) suggests that:

> . . . what in fact is offered by a 'quality' approach is a coherent framework for thinking about the management and improvement of organisations – a systems view of the organisation. (p. 10)

Connor (1998) states that he read a paper with over 200 definitions of the term. For this project two definitions were given to teachers to find out what their understanding of quality was:

- By quality I basically understand it to be a set of processes and procedures

  'Quality is excellence in the management of our services, our processes and our products. Quality management focuses an organisation on the needs of its customers, with a view to ensuring ongoing competitiveness and effective use of resources.'

- By 'quality' I basically understand it to be a philosophy and commitment to continuous improvement that is built into the culture of the training organisation

  'A quality system is a comprehensive, organisation-wide approach to continuous improvement and ensuring consistent quality standards. It involves looking at all aspects of your service and asking 'how can we do things better?' But, you don't just ask the question once. In a quality system, everyone in the organisation continually looks for ways to improve products, services, and timelines, processes - and ultimately, outcomes and client satisfaction.'

In each group discussion teachers selected the second definition as the one they personally ascribed to and worked to and which reflected the professional culture they shared: a commitment to continuous improvement and to educational standards. In contrast, the first definition reflected the bureaucratic quality culture characterised by quality assurance, processes and procedures and this was what teachers perceived management to be implementing. Some teachers in the group felt that the first definition was a subset of the second while others felt there really were two ways of thinking in their organisations and they were compatible.

Findings

In order to discuss the findings the approach adopted in this paper is to:

- look back and report what has been achieved so far in terms of quality implementation and the changes that have taken place in the VET sector
- look inwards and present what impact quality has had so far and what issues cloud the picture
- look forward to discuss what the implications are for the VET sector of recent literature and recent practice in USA into quality and its impact in the classroom.

LOOKING BACK

The factors to note in looking back are:

- There have been enormous changes taking place in the VET sector which all potentially have an impact on the quality of the teaching and learning experience. These changes include restructures and amalgamations/mergers of TAFE institutes, the changing nature of the work of TAFE teachers, the mix of full-time to part-time staff, the range of clients the teacher has to satisfy as well as fundamental changes to education and training (the move to a competency-based system, the move to an evidence based approach to assessment, the move to flexible delivery which incorporates self-paced learning, training packages, training in industry, user choice and new apprenticeships).
- At the national level the VET sector has a set of eight quality principles (ANTA 1997) on which to base its approach to quality. These principles are broad and simply state the importance of leadership, customers, staff, training products and services, data for decision making, continuous improvement.
- The VET sector has developed the Australian Recognition Framework which sets out the guidelines for registration and quality endorsement of training organisations. It has developed training packages which set out the competency standards for the industry, assessment guidelines and a qualifications framework. There are key performance measures for the VET sector and a number of major data collections: the national VET statistics collection, the national graduate satisfaction/outcomes survey and employer surveys.
- At the State level each State and Territory has developed its own quality framework for VET for all institutes to use for self-assessment. These quality frameworks are based on the Australian Business Excellence Framework which focuses the organisation's leaders, people, customers, processes, strategic planning, information and analysis, and organisational performance. At the State level there has also been activity related to benchmarking projects, best practice projects, surveys of graduates and employers and development of performance indicators..
- At the level of the training organisation, the quality journey may take many forms. The most common include achieving ISO 9000 certification, either for the whole organisation or teaching units/sections within the organisation; self-assessing against the state's quality framework with a view to gaining quality endorsed training organisation status; seeking quality endorsed training organisation status; conducting surveys of graduates, students, employers and staff; developing documentation to support processes which contribute to the good running of the organisation.

For the teacher in the classroom recent national projects that have focused on the teaching and learning process per se have included the manual *Good, Better, Best* (ANTA 1997) which is a tool for the teacher to use to allow them to reflect on their current practice and OTFE (1996) *Success in Practice: a guide for vocational teachers and trainers.*

As yet there has not been a focus on quality in the classroom. In Victoria the *Quality in Schools* project which involves piloting quality implementation in 28 schools, set itself the goal of improving school leadership and management processes in its first year and in its second year it has set the goal of improving teaching and learning processes. This has not been a goal of the VET sector to date and it is time that it was acted upon. Improving the learning that takes place must be the goal of implementing quality. It can not be limited purely to the management and administrative processes.

> The bottom line in education is not money saved or spent, but learning and its impact on society. (Langford, 1999, p 23)

LOOKING INWARD

In the questionnaire teachers were asked to identify quality initiatives so that we would understand what their experience of quality was. This question was open-ended and thus a range of answers was elicited. The type of quality initiatives that teachers identified are listed in the table below. Since teachers were asked an open-ended question the table lists the number of examples of each type of quality initiative as well as the number of institutes in which teachers identified this type of initiative. The most commonly named quality initiatives were ones relating to quality management (ISO 9000, quality manuals, quality audits) as well as initiatives related to customer focus (surveys, better enrolment and induction procedures), staff (surveys, in-service training, staff inductions, performance indicators) and management of information (better enrolments records, record-keeping, roll books, documented policies and procedures). Interestingly, many teachers identified national initiatives such as flexible delivery, CBT, audits, the Australian Recognition Framework, workplace delivery, user choice, upgrading learning resources as quality initiatives.

Quality initiatives	**No. of examples**	**No. of Institutes**
Initiatives relating to quality management in the institute	18	7
Customer focus	12	8
National VET initiatives	12	5
Initiatives relating to staff	10	8
Administration/management of information	10	7
Physical environment	5	3
Initiatives related to delivery	5	4
Initiatives related to assessment	3	3

Having identified the range of quality initiatives, teachers were then asked whether quality initiatives were having an impact on the work they do. Of the 116 teachers who answered this question in the preliminary questionnaire, 79 (68.1%) answered yes and identified positive changes, 27 (23.3% answered no and identified negative changes and 10 (8.6%) were not sure.

In the questionnaire, teachers were asked to identify changes to the work they did as a result of implementing quality. Again this was an open-ended question and a wide variety of answers were given. The table below summarises these answers.

Positive changes that have resulted from implementing quality	**Number of different examples**	**Number of Institutes**
improvements to administration	11	7
more focus on the learner	5	6
better assessment practices	5	6
approach to work is different	14	5
more focus on the customer	2	5
delivery is better	3	4
better learning resources	6	3
better facilities and equipment	3	2
more staff development	4	1
more focus on outcomes	1	1

The negative changes were generally the fact that there was now more paperwork to deal with, more administration and thus a greater non-productive workload and less time for preparing lessons, preparing resources, marking and keeping up to date with new initiatives in VET.

The positive changes reflect the type of quality initiatives that teachers identified - the national initiatives, the focus on customers, the focus on administration. The most interesting positive change was the approach to their work. Here teachers stated that a growing knowledge of quality systems:

- is empowering and encourages teachers to look at different ways of improving delivery encourages teachers to self assess and reflect on teaching practices
- creates greater enthusiasm for teaching/learning
- greater cohesion and cooperation between teachers
- encourage teachers to be more innovative and more flexible
- gives more authority and more responsibility - and therefore more satisfaction
- leads to continual upgrade of skills
- is welding of team ethos within the department

During discussion a number of teachers observed that none of the institute quality initiatives were directed at the process of teaching and learning:

> the administrative systems have been given more attention than the adult learning process.'
>
> 'the message is not reaching the classroom'
>
> 'I am completely unaffected by the formal quality process at the institute level. I have always endeavoured to provide quality education to my students.'
>
> 'I don't believe the quality system has really been aimed at the teaching programs to any great extent. I t has certainly documented the administrative side but it has not changed the face-to-face teaching strategies of staff.'

Where teachers gave examples of classroom practice changing in terms of delivery and assessment practices, this is most likely to be a result of national initiatives such as flexible delivery and workplace assessment , rather than the quality initiatives themselves - although the quality movement within the Institute may well have added impetus to the national initiatives. However, overall, the impact so far has been superficial and within the boundaries of the current approaches to teaching and learning which are dominated by this notion of 'delivery' - which has associations with providers and recipients of training.

During the discussions with teachers it became clear that there were three schools of thought regarding the impact of quality in the classroom:

- the positive view - quality is having an impact: it is changing our way of thinking; we listen more to students; we work as a team; we are energised and motivated; we go out to industry more.

- the negative view - quality is a disruption in that it increases workload and takes away precious time from core business - which is preparing classes, teaching, designing resources, exploring new delivery options and keeping up with changes in the VET sector. In fact teachers with this view will state that the implementation of quality has decreased the quality of teaching in the classroom and has not brought any advantages to students.

- no change view - we have always listened to students, we have always aspired to improve and deliver a quality education.

Thus the early advice that this project was premature would appear to have been correct in that:

- Quality means different things to different people
- Quality in VET has not focused on the learning process yet, except in superficial ways

- Quality has been implemented as a way to improve business and the way an Institute is run, not as a means to improve learning.
- There are many other initiatives which are impacting on the work teachers do and they are still in the midst of understanding them and coming to terms with them.

LOOKING FORWARD

A review of literature and current work in USA revealed that before we can start to evaluate the impact quality is having on the classroom, we have to come to a common understanding throughout the VET sector of what quality can mean to the learning process. This project started off with a couple of definitions of quality - one had a quality assurance focus and the other more of a total quality management focus. Having now talked to more people, read more, listened more and thought more, I believe the definition we should be adopting in VET is one which David Langford (1995) puts forward:

> Quality is a new way of seeing and thinking about the very relationship between the teacher and the learner. (p. xi)

Langford goes to say that

> The impact of quality does not lie in any cookbook approach to change. Instead, it is embodied in the remarks of teachers who say they feel 'released, and free to think'...The impact of quality is found in teachers who turn to their students for learning, in students who become facilitators of their own and others' learning, in administrators who say, 'this concept has changed my life ' and in leaders who say ' I've gained so much by letting go. (p. xii)

Myron Tribus succinctly defines quality as 'joy in learning'. Tribus also observes that for too long teachers have been concerned with what and how to teach - hence the emphasis on curriculum and packages and not with how learning actually occurs. He describes a leader as a person who:

> ... persuades people to do what they would not otherwise do. The leader takes them to places they would not go by themselves. A leader creates new systems within which people can achieve goals to which they and the leader aspire. (p. 26)

This description is in essence the description of teacher in a class in which the main process is learning, not teaching.

Improving the bottom line in a training organisation is improving learning. Let's not lose sight of this! Improving learning means more than increasing the module load completion rate or percentage of graduates in employment. It means getting students involved in learning, arousing their desire to learn and creating an environment in which learners feel intrinsically motivated to learn. Langford talks about the need to make a paradigm shift away from teaching and towards learning: we can consciously and with consistent effort and commitment create an environment in which the student's desire to learn is aroused and this will by necessity mean an environment in which the student is given responsibility for learning and is equally accountable with the teacher for learning taking place. We are not talking here about lip service to student centred learning we are talking about a philosophy which permeates all class activity .

Langford (1999) defines learning as the process by which a person gains

- Information (facts and figures)
- Knowledge (understanding those facts and figures)
- Know-how (apply the knowledge)
- Wisdom (using judgement, discernment and experience to decide how, when, whether to apply the knowledge you have to a variety of situations)

The writings and workshops of educators such as Tribus and Langford give an insight into the body of knowledge and theory that underpins the quality philosophy - they draw, particularly on the wisdom of Deming(1994). The wisdom, which is not yet part of the VET quality 'psyche', is:

- The key to implementing quality is leadership - leadership in the VET system, leadership in the training organisation, leadership in the teams/sections/teaching units and leadership in the classroom itself. Langford (undated, p. 6) observes that the ingredient which is most in short supply once basic funding needs are met is not money but leadership.

- Having a quality approach means taking a system's view of issues - in the class that means looking at the performance of the group and seeking to improve the performance of the whole class rather than focusing on individual students and seeking to improve individuals who are performing below the 'average' level.

- Data are necessary to improve the system, that is the class. Teachers and students can gather data on the system and analyse the data using tools such as correlation charts, frequency charts, Pareto charts and using simple statistical techniques such as calculations of standard deviation.

- All systems have variation and thus variation is normal: thus for the teacher it is important to chart progress each week of the whole group and to note the variation that is within the normal range. It is the teacher's job to improve the system - the whole class - so that performance for all students falls within boundaries of what the teachers and students regard as acceptable. Any performance outside of this can then be studied to identify if it is a special cause, and if so, what action needs to be taken. Deming warned practitioners of the dangers of treating common causes of variation as if they were special and treating special causes as if they were common. The only way to avoid this danger is to gather and chart data on the whole group and analyse it regularly.

- Quality tools and processes are one way of ensuring the learner owns the process of learning, allows them to be responsible, allows learning to be 'just in time', ensures the learning is relevant to the learner, allows the learner to be active and to 'do' rather than to 'receive'.

Conclusions

Insights which I have gained from this project so far and which I feel do contribute to fundamental theory and knowledge, which are relevant to practice and which build on the work of others are:

- The way quality is defined and commonly understood throughout the VET sector and the way it is described in the VET quality principles is too far removed at present from core business - that is, learning. They do not mention learning, nor do they mention a systems approach, the need to improve the process of learning in order to improve the output, the importance of planning, or the need to note that variation is inherent in all systems.

- Too often quality is interpreted and acted upon as if it is customer focus or strategic planning or data collection. These are the parts of what constitutes a quality approach, not the whole

- The quality framework for VET is a powerful tool and has already had an impact on the management and administration of training organisations. This tool is potentially a powerful tool for the classroom if we start thinking of the class itself as the organisation, the teacher as the leader, the students as the people in the system and the product as learning.

- The bottom line for VET organisation is improving learning: this is the 'profit' of a quality training organisation that is managed and run effectively and efficiently.

The structure for this shift from teaching to learning is with us: we can take the quality framework and use it in the classroom if we change our thinking about what a class is and what the roles of students and teachers are. The quality framework is built around seven criteria. At the institute level where the institute is the organisation, the leaders are institute management, the people are the staff of the institute and the customers are students and employers.

At the classroom level where the classroom is the organisation, the roles change: the teacher is the leader, the students are the people in the organisation and the customers are the beneficiaries of the student's work - this can include employers, other teams of learners and the community if work has been undertaken for the community, either in real life or in a hypothetical setting.

Some teachers may choose to achieve the paradigm shift by putting into practice adult learning principles or other approaches. The quality framework and tools are one way, perhaps a more disciplined way, of ensuring that improved learning is the bottom line. The table below is a brief description of how the quality framework for VET can be applied in the classroom.

Quality Framework for VET	Application to the classroom/learning environment
Leadership	The teacher is the leader. The role of the leader is to improve the system (the class) with the help of the students. The leader creates an environment in which students motivation to learn is aroused. The leader communicates with and gets involvement from employers and members of the wider community.
Strategy, policy and planning	Designing the learning experiences, deciding on a class code of conduct is done by the teacher and students working together within the boundaries of the competency standards or training package. Lesson plans should not be designed solely by the teacher, but with the students.
Information and analysis	Data relating to performance, gaps in knowledge, barriers to learning, for example, is collected by the students themselves as well as the teacher throughout the learning process and is analysed using basic statistical techniques so as to inform and guide the learning.
People	The people in the system are the teacher and the students. Students own the learning. The teacher's role is to guide, oversee, coach, coax the students and lead them to becoming independent learners. The students work with teachers in planning the learning, doing it and monitoring it through, for example, self-assessment against a competency matrix and portfolios of work.
Clients focus	Learning happens when there is a clear beneficiary of the activity that students undertake. Thus the beneficiaries of learning experiences could be employers, a community group, the students themselves or their families - just depending on how practical and real the learning experiences are. There is more motivation to undertake a project or piece of work once a beneficiary has been identified.
Process and service	Learning is the process – quality tools can be used throughout learning to involve students in designing their learning experiences as well as monitoring and assessing the activities they carry out which are part of learning.
Organisational performance	The success of the whole class is monitored and it is the teacher's job to work on the system so that improvements benefit everyone. Measures of success can include scores on individual assignments. These can be reported anonymously for the whole class and the performance of the whole class can be monitored and everyone can play a role in working out what aspects of the system heed to be improved. Areas of poor performance are identified and the teachers and students work on the system to improve this, rather than focusing on individuals who did not perform.

At present we could measure the impact quality is having on management of institutions because this is where most the quality activity has been directed. Heywood (1998) summarised this when he said:

> what in fact is offered by a quality approach is a coherent framework for thinking about the management and improvement of organisations – a systems view of the organisation.

What we need now is to adopt a systems view of the class and then we will start seeing quality *learning*. At this stage we will be ready to assess the impact in the classroom of the body of knowledge and wisdom which is called 'quality.'

> The challenge for those in education is to reclaim and reshape the (quality) agenda to adapt it to the goals we can believe in and support as educators. (Jackson, 1995 p. 56)

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WORK-RELATED SKILLING IN PRIMARY AND SECONDARY SCHOOLS IN PAPUA NEW GUINEA

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ABSTRACT

Vocational education has long been oriented toward the formal employment sector of the economy in Papua New Guinea. That sector is in decline but the informal sector is growing rapidly. There is little evidence of vocational education responding to this significant change in the work place despite extensive efforts to reform all sectors of education over the past five years.

Few school students in Papua New Guinea are able to, or want to, enrol in vocational education institutions. Rather most will withdraw from any form of schooling by grade eight. At present their school experiences hardly equip them for work and life in rural village settings to which most will return.

Primary and secondary schools, in a reform environment, are faced with the task of developing strategies and programs to provide work-related skills for the majority of youth in the country.

One strategy readily adopted by educators is to vocationalise secondary education but finance, necessary facilities and required expertise are known to be in short supply. An alternative strategy seeks to connect primary and secondary schools with local work environments and communities. There are difficulties with this approach but it offers a long-term solution that is socially and culturally consistent with emerging education and work contexts in Papua New Guinea.

Human capital development in Papua New Guinea

There are some four million people in Papua New Guinea of whom 42% are under the age of 15 years. There is a low level of human capital development in Papua New Guinea.

Table 1: Human capital development in Papua New Guinea – selected factors

Country	Life expectancy	Adult Literacy rate	Mean years of schooling	Education attainment	Primary enrolment Ratio (net)	Secondary enrolment ratio (gross)	Education expenditure as % of GNP	Human Develop-ment Index
PNG	49.6	52	2.1	0.76	73	11	2.6	0.138
Solomon Is.	60.7	23	2.8	0.09	93	14	6.0	0.191
Vanuatu	62.8	64	4.0	1.33	103	18	4.6	0.424
Fiji	63.1	87	6.8	2.31	94	57	5.1	0.652

Source: UNDP Report, 1994

Employment Structure

There is a major problem of youth unemployment in PNG. Wage employment opportunities are low and the growth in jobs falls far short of the number of school leavers each year.

Table 2: Activity status of PNG youth aged 10-24 by gender and place in percentages (1990)

	Labour Force						Non Labour Force		
	Wage	Non-wage	Cash farming	Subsistence farming	Not employed	Sub total	At school	Other	Total
Urban									
Male	23.1	1.6	1.3	1.3	25.8	53.1	38.4	8.5	100.0
Female	10.3	0.8	2.2	1.4	15.9	30.6	36.8	32.6	100.0
Rural									
Male	3.2	3.2	21.5	22.3	5.2	55.5	30.6	13.9	100.0
Female	1.5	1.7	23.8	22.1	3.9	53.0	24.6	22.4	100.0

Source: ADB Study, 1997)

Some 42% of male and female 10-24 year olds in the urban labour force in 1990 were not employed. Rural youth are unlikely to go into wages employment and some 88% of them reported subsistence agriculture and cash farming as their main activity of work.

Education reform

Education, in Papua New Guinea, has been undergoing reform since 1992 although the introduction of the reforms are not uniform throughout the country.

A three-year elementary program has been introduced using local vernaculars for instruction, primary schools operate from grades 3 to 8 and secondary schools from grades 9 to 12.

Table 3: Papua New Guinea education enrolment data – all public education institutions - 1998

	Elementary	Primary	Secondary	Vocational	Technical	Distance	Tertiary
# students	461335	274396	38517	12853	1398	28769	9867
# institutions	4400	2906	146	115	6	2	33

The National Department of Education has responsibility for non-formal education but it is a neglected and marginal sector of education. It is mostly handled by non-government organisations and there is little, if any, co-ordination and participation rates and the kinds of programs offered are unknown.

The education reforms focus on improving access, equity and retention rates at all sectors of schooling. Access and equity issues have shown considerable improvements in the past five years however retention remains a continuing problem. The Department of Education is now turning its attention to matters of quality and relevance at all sectors of education.

Schooling

The current and projected enrolments are impressive for they indicate the substantial increase in student numbers in all grades. But the enrolment data are also impressive for the number of students who fail to complete a basic education cycle or progress to upper secondary education in Papua New Guinea. For example:

- some 87495 children withdrew from the education system from 1997 to 1998;
- some 31427 students withdrew from the three upper primary years of education (grades 6-8) from 1997 to 1998;
- some 110496 children of the 1994-2004 cohort will withdraw from school; and
- some 110832 children of the 1995-2005 cohort will withdraw from school.

The Unschooled

All the time there is the unaccounted number of children who do not enroll in the formal education system at any time. The number of children in this category is unknown although it is generally accepted that some 70% of the cohort enroll in the first year of schooling.

Much stronger links are needed with non-formal education initiatives and with employers and communities in order to reconnect those children and youth who never attended school in the past or were loosely coupled and withdrew before they reach an expected exit point. Strategies are needed to improve retention rates such as a national awareness program, free education, compulsory education, improve school/community liaison, and flexible school fee policies.

Post-school opportunities

The education reform targets anticipate that 50% of students completing grade 8 will continue to grade 9, either in a secondary school or a vocational secondary school, and the remaining 50% will go onto vocational centres or withdraw from education. The reform anticipates that some 25% of those students not enrolling in grade 9 will enroll in vocational centres.

Table 4: First year enrolments in vocational centres 1994-1997

	1994	1995	1996	1997
Male	3940	4004	3648	4252
Female	1677	1541	1574	1573
Total	5617	5545	5222	5825

The number of grade 8 leavers indicates a steady growth for both sexes. Unless there is considerable expansion of the number of places available in vocational centres or in the number of vocational centres themselves, the percentage of expected grade 8 leavers who will seek to enroll in a centre will exceed first year vocational centre places by the year 2000. Of course this does not include those grade 6 and 7 students who want to go to vocational centres.

Are grade 10 and grade 12 students progressing to higher education? School leaver and selection data does not hold a lot of hope.

In 1997, more than 10,000 grade 10. Grade 10 students are being affected more and in 1998, for instance, Madang Teachers' College, admitted only grade 12 graduates in its first year intake. Other colleges took in an increasing number of grade 12 graduates as well when the official entry requirement continues to be grade 10 education. Technical colleges are also taking increased numbers of grade 12 graduates at the expense of grade 10 leavers.

Table 5: Number of grade 10 and 12 school leaver forms and selections (1997)

	Grade 10			Grade 12		
	Male	Female	Total	Male	Female	Total
# applications	8793	5862	14655	1554	801	2355
# to grade 11	1683	874	2557	N/A	N/A	N/A
# to HEI	849	725	1574	729	470	1199
Total selected	2532	1599	4131	729	470	1199
Total not selected	6261	4263	10524	718	438	1156

Source: Office of Higher Education, 1997

More than 1000 grade 12 students were not selected for higher education studies. As little as five years ago some 90% of grade 12 leavers went onto higher education opportunities. The expansion of the number of grade 12 graduates as a result of the reform, and the lack of expansion of the higher education sector, means that as few as 40% of grade 12 students will progress to higher education institutions in 1999.

The expansion of higher education is not keeping pace with the number of graduates from grades 10 and 12, and as a result school leavers are increasingly denied places in further education institutions.

The approach has been to strengthen vocational education in Papua New Guinea. What does this mean in practice?

Vocational education

Vocational education, for most people in Papua New Guinea, is represented by those educational programs located in the vocational centres spread throughout the country. These centres have traditionally catered for grade 6 school leavers who are at least 15 years of age and offer trade related courses such as carpentry, motor mechanics, home economics and metal fabrication. There have been considerable criticisms of vocational education over the years, which centre on the following issues:

- The lack of a national curriculum, standard assessment systems and certification;
- The lack of a clear, unambiguous role for vocational centres;
- The low priority placed on centres by provincial governments;
- The poor funding base for this sector;
- The lack of adequate teacher training opportunities;
- Wide disparities between the quality and quantity of vocational education from one centre to another; and
- Few, if any, linkages between vocational training, employers and labour market needs.

The education reform anticipates that grade 8 will eventually be the minimum entry requirement for centres. There have been a number of initiatives over the past five years that are aimed at reviving vocational education in Papua New Guinea.

The German Government through GTZ, for instance, is working closely with vocational centres to enhance the quality of vocational training and to contribute to the development of a national policy for this sector of education. The project consists of several initiatives such as upgrading courses; the introduction of competency based training courses in a number of trade related areas such as motor mechanics, plumbing, welding and carpentry; preparing students to sit for level one national trade tests; increased professional development opportunities for staff; and the upgrading of facilities and equipment.

The recent corporate plan for technical and vocational education for 1999-2003, released by the Department of Education (1999), recommends greater control of curriculum, competency based training and credentialism. It points out that a substantial increase in its budget to almost 88 million Kina is required to fund the plan but recommends against the expansion of centres but an increase in student numbers.

The Corporate Plan and the GTZ initiatives strengthen the swing towards formalism in vocational education. This may be a useful strategy to pursue but it poses a number of problems.

Vocational centres are one of the few opportunities for youth and adults to gain education and training even if it is sometimes of a low standard. Short course development offers significant possibilities for married women and other adults and community participation in defining the needs of the informal vocational sector.

The Department of Education, in a rather contradictory move, has accepted a report that recommends a national policy shift for vocational education from formalism to a strong community orientation (Department of Education 1997). It aims at improving and co-ordinating competency training in Papua New Guinea. It conceives vocational education as 'the planned acquisitions of competencies together with the necessary knowledge defined by community, individual, social and economic needs relevant to the development of material well being in the informal economic sector' (p.1-1).

It urges that 'vocational training should increasingly be focused on community-based instruction, for economic opportunities defined either by village and community development projects, or by taking advantage of niche opportunities in the formal economy (p. iii). It suggests that course development should be orientated to:

- Community planning and decision making;
- Competencies for development; and
- Development of village resources.

The management of GTZ have sensed that formalism is effectively disenfranchising a large sector of the population who require the flexibility of non-formal education approaches. Recently, GTZ facilitated the development of short courses in the five pilot centres.

More recently, there has been considerable concern shown by politicians and education decision-makers for those children who do not go to school or withdraw early. There is a move away from a formal orientation to that of non-formal education and the informal economic sector.

The responses have been in terms of supporting the introduction of short courses in vocational centres, the development of vocational secondary schools and the introduction of work-related skilling in upper primary schools and in secondary schools.

What is work-related skilling?

The term work-related skilling is a new term in education in Papua New Guinea. It does not appear in the literature relating to education in this country. The literature uses terms such as vocational education, skills training, employment skills, informal education, training for employment and, more recently, technical vocational education.

The term most commonly used is vocational education. The literature indicates multiple meanings for this term, but for many in Papua New Guinea, vocational education consists of those activities and experiences that take place in vocational centres.

The notion of work brings to mind the idea of regular, full time, paid activity in the formal employment sector of the economy.

Formal employment often assumes the completion of some kind of training in a post-school environment such as a technical college, nursing college, teachers' college, agriculture college or university. It could also be the kind of training that is provided on-the-job or in an industry training centre. Work skills are developed in these environments but they have a very strong focus to support the anticipated employment outcomes planned for, and by, individuals.

Work is viewed more widely for the purposes of this paper. It is any physical or mental activity or endeavour taken on by an individual or groups to sustain and improve the livelihoods of people. It is an activity that is not necessarily connected with a trade or occupation and not necessarily carried out for monetary gain.

Work-related skills is a broad concept and includes competencies which people need to successfully carry out physical and mental activities and to sustain or improve their livelihoods. Literacy and numeracy skills, problem solving, creativity, ethical behaviour and interpersonal skills are included but so are skills that relate to the uniqueness of village and urban living contexts in Papua New Guinea. Skills such as those required for success in agriculture or fishing; skills related to constructing and sailing a canoe or driving a motor vehicle; and those associated with constructing a village latrine or replacing a leaking tap washer.

Implications of a work-related skills initiative

SCHOOL ORIENTATION

The orientation of schools will need to change from a traditional approach involving prescriptive curricula; a high level of control of teachers and students; traditional timetable structures and subject-based staff structures; curricula that is underpinned by inspectors, subject consultants, syllabus advisory committees and national examinations.

The introduction of elementary schools have grown out of a strong village initiated 'tokples priskul' tradition and reflect a very different school orientation. The language of the elementary school is that of the local vernacular, community members have a role in choosing teachers, schools are mostly located in villages, parents assist in the development of the curriculum and the village is an often used, and lively, teaching resource. Elementary schools are oriented to the community and in comparison to other schools, effectively connect themselves to local places, environments and people.

PARENTS AND COMMUNITY

The majority of parents in Papua New Guinea understand education in terms of an investment that is repaid upon children securing employment in the formal employment sector. Parents are disappointed whenever the return fails to eventuate and there is considerable 'shame' felt by the student. Nonetheless, parents accept children returning home after six, eight or ten years of schooling without useful skills as a natural progression in life. They view their own knowledge and the village as a back-up strategy should children fail to secure formal employment.

Reports and reviews have consistently urged that parents and community participate in school business in order that the nature and requirements of society are well represented in the orientation of schools and the actual curriculum that is presented. Lawton (1983) refers to this as the 'selection from a culture' of the knowledge, skills and attitudes that the community wants reproduced in its schools.

Communities have been de-skilled in terms of reproducing themselves. Decisions about education are made by others. But of course communities have, in the past, established comprehensive learning and teaching processes that accompanied their own knowledge base and culture. There is value in re-visiting these.

The argument is not about reconstructing tradition. Community people do not live traditional lives. They use modern tools and ideas very successfully. Participating with the community does not imply reconstructing traditional knowledge for learning. Participating with the community refers to the co-construction of the curriculum and re-skilling the community to take responsibility for development.

> ... there is a set of skills and knowledge which are appropriate to living in Pari such as basic skills for living in the community, small business skills, motor maintenance skills, fishing and agriculture skills, respect, participation and acceptance. Parents felt that Pari school should offer more in the way of practical activities related to fishing and agriculture, typing, poultry, pig farming, handicrafts, vegetables for restaurants and hotels, furniture construction, mechanics and sewing for those students who would not go on to grade ten.
>
> Another group ...... pointed out that little development was likely to come to Megiar and that copra production would be the mainstay in terms of cash income. Young people needed knowledge to support that kind of an activity and other activities that relate to the land. Improved methods of gardening, small agricultural projects such as a piggery, poultry and alternative garden crops, such as tomatoes, needed to be understood. Knowledge about alternative power sources, soap making and clothes making were suggested as forms of knowledge and skills relevant to the primary school curriculum and relevant to a self-sustaining village life. (Guy et al., 1996)

There is much to be learnt from parents by actively engaging them the school and the curriculum.

The development of suitable infrastructure is required so that school teachers, parents and other members of the community, and curriculum developers can ask their questions in the same forum and identify alternatives together as participatory and cohesive steps in the process of developing relevant curricula and a connected school.

CURRICULUM

The upper primary school (grades 6 to 8) is a crucial sector of education for the development of work-related skills because of the large number of students who complete schooling at the end of grade 8.

There is only one anticipated learning area in the upper primary school reform curriculum that focuses on work-related skills at present. It has grown out of the traditional subject areas that make up Basic Technology such as practical skills, home economics, commerce and agriculture. It is yet to be fully developed. It is called Making a Living. But it is not endorsed by all. Some see it as 'watering down' traditional subjects such as commerce, practical skills and agriculture.

There is uncertainty about its place in the curriculum. Some feel it should involve 360 minutes each week. Curriculum Division suggests as much as 500 minutes per week. In comparison, Language would be allocated 240 minutes, and Maths and Science some 200 minutes each. Debates will continue as to the organisation of the upper primary school. Should there be a core of academic subjects and optional work related skills courses? Should some students do more academic study whereas others do more work related skilling?

Vocational secondary schools, situated at the grades 9 to 10 level, are being introduced and are based on the notion of developing a secondary system with the same academic standards as the normal secondary system for the core academic subjects and the provision of vocational subjects. Vocational secondary schools provide access to upper secondary studies for those students who wish to continue with their studies.

Vocational secondary schools are weakly defined at this stage and there is much uncertainty as to what the final shape of vocational secondary schools should look like.

The AusAID funded Education Sector Resources Study (1995) suggests the curriculum mix is likely to be 75% practical subjects and 25% academic subjects. The Department of Education suggests 25 periods for academic subjects and 20 periods for the practical subjects.

Traditional practical subjects such as agriculture, business studies, woodwork, and metal work are suggested together with work-related skill courses such as screen printing, fish net repair, artefacts, appropriate technology, mothercraft, catering, small business management skills, and culture and tourism.

There are compulsory and optional subjects at grades 11 and 12 in the secondary schools. Schools have developed school-based courses that are appropriate for the local contexts. For example, Hoskins Secondary School offers courses such as Applied Technology and Rural Technology and Gordons Secondary School offers a course called Urban Technology. These courses are not written by the Curriculum Division but developed locally by teachers. Advice is available from curriculum specialists and locally developed courses have to be submitted to the Board of Studies for approval.

How do you assess the kind of activities that have just been discussed in a school setting. Papua New Guinea education is dominated by assessment procedures, testing and examinations.

TEACHERS

In a sense, teachers have been de-skilled from what they know about their own communities. Teachers' colleges effectively socialise teachers into new behaviours and understandings. They become proficient in using and understanding teachers' guides and texts produced elsewhere. They are no longer confident to draw on their own knowledge and experiences to provide interesting and relevant experiences for children.

> Two young, articulate and enthusiastic teachers talked to us about the Basic Technology course that they teach in a primary school in Port Moresby. They were annoyed that they treated the course materials from a theoretical viewpoint only. They did not use the large village just across the road or the major city on their doorstep. They wanted to but they were unable to connect the school, their students, their program or themselves to the outside world.

Teachers need to be re-skilled for the activity of teaching in the new millennium in an education system that seeks to be relevant.

Primary school teacher education courses have undergone extensive review in the past three years. A new set of national curriculum guidelines were approved in 1998. These guidelines are based on a new structure known as Program 2000. Five strands are included: Professional Development, Language, Science and Mathematics, Social and Spiritual Development and Community Development.

The Community Development Strand has a particular relevance for teachers working with local communities and in the area of work-related skills. It consists of two areas of study: Community Development which includes Understanding Community Development, Developing Partnerships, Planning and Initiating Development, and Integrated Community Projects, and the second area, Technology, which includes Principles of Technology and Practical Applications.

STUDENTS AND YOUTH

Many students develop unrealistic expectations of what they will achieve after school. Parents and communities may also have quite unrealistic aspirations for students regarding jobs or higher education opportunities.

> Several youth groups were involved in this study. They reported similar experiences. One group was formed as a cultural group and used traditional folklore and dance as a social activity within a village setting but later as an income generating activity. A large number of youth were involved in this group many of whom had less than grade 6 education. An adult established himself as the leader and for several years the group had a lively reputation in Port Moresby for its dance skills and authenticity. Income was good and payments were received from some of the major hotels and tourist activities around town. The group went overseas to perform. The funds were never accounted for and the youth in the group did not receive regular payments but felt that they were exploited and the group broke up. Accusations flew but the problems of the group centred on money and a lack of entrepreneurial understanding of the potential of the group and its earning capacity by the majority of the members. The leader of the group was well aware of the earning potential.
>
> Some of these youth are trying again but with a better understanding of organisational and money matters. There are many activities that youth get involved in. They have access to land, and labour is plentiful, but know how and capital is lacking.

There are many lessons in these stories that can be used in the development of work-related skilling at school. It is not just learning to hit a nail with a hammer. In fact most children are quite good at that.

Work-related skilling

An integrated work-related skills from Prep to grade 12 will assist children and youth to develop realistic notions of their own abilities and their suitability for a whole range of work contexts. Work-related skilling should challenge students with problem-solving situations in order to encourage participation, leadership and individual responsibility. Work experience outside the classroom is an essential focus for meaningful problem-solving activity for older students. Some primary schools and certainly secondary schools will want to initiate small-scale entrepreneurial activities in collaboration with the community and in this way show students how they can become producers as well as consumers of resources. There should be more emphasis on the teaching of small-scale management skills through group participation and other appropriate techniques and the possibilities for work within the formal and informal sectors of the economy.

The orientation of work-related skilling will be the community and the analysis of local work contexts. What are youth likely to do when they complete their schooling and return to the village? What kind of work will they dio and how can the school support the development of the knowledge and skills needed in that context?

It does not mean a new subject separate from others. It requires a review of existing curricula to ensure that work-related skilling, if it is not already part of integrated teaching approaches from elementary school to upper secondary school, is in fact a part of the curriculum. It will require new forms of assessment and inspectors who encourage initiative and a strong community orientation.

It will require teachers, students and the community to work in collaborative and negotiated ways and it will require a school timetable that is flexible and provides extended blocks of time for activities rather than lockstep period allocations. It must allow for some students to do more conventional subject oriented studies and others to do more work-related skills activities.

Work-related skilling remains to be carefully defined and designed. What must remain uppermost in the minds of planners, curriculum developers and teachers is the recognition that what has been done in the past has not worked for the majority of students in Papua New Guinea. The informal sector of the economy is emerging as a powerful social, cultural and economic context and provides direction for a responsive education system.

Summing up …

The orientation of education in Papua New Guinea in the past has been an academic one consistent with the needs of the formal employment sector. The growing realisation that there is less formal sector employment available has even parents thinking of alternative approaches to education and schooling.

Politicians and education decision-makers are focussing on work-related skilling to prepare all children for the possibilities of work in the informal sector of the economy.

There is much sense in all students participating in work-related skills education because:

- the largest group of leavers is at grades 6, 8, and 10 and the majority of these students no longer go onto higher education or secure employment in the formal employment sector;
- there is no longer any guarantee that grade 12 leavers will secure formal employment or a place in an institution of higher education;
- the majority of students upon leaving school will return to villages to work in the informal economic sector

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Vocational centres were initially established to 'train for jobs', then to train for 'back to the village' then to train for both; they were first part of the formal education system then included under non-formal education only to return to the formal system. Vocational centres have, from time to time, been committed to adult education, extension programs, the development of workshops, the provision of short courses, village-based training for adults in the centres or in village communities, and the provision of formal and informal skills training for grade 6 school leavers.

Reforming vocational education

There is a real danger that the development of vocational secondary schools will result in the affirmation of the mediocrity of vocational centres. Vocational centres may need to be reconstructed with a clear community role to facilitate skills developments for adults and youth who have been denied opportunities through the formal education system.

The National Education Plan A (1995:18) states:

> This plan aims to give some status to the Vocational Centres. This will both be through the establishment of 'Vocational Secondary Schools', and an improvement in curriculum and teaching standards in 'traditional' style centres.

It is not quite clear just how the development of vocational secondary schools will give status to vocational centres - a 'super' vocational centre to be known as a vocational secondary school and a traditional 'poor relation' vocational centre.

The original plan sought to replace vocational centres with vocational secondary schools to overcome the terminal nature of vocational centre courses.

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MAKING JUDGMENTS AS THE BASIS FOR WORKPLACE LEARNING — PRELIMINARY RESEARCH FINDINGS

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> 'Grant was not a "lawyer's lawyer". He would not want to be remembered for his technical abilities or craftsmanship in the law, although it has to be said that he was a most accomplished lawyer. His talents lay more in his use of masterful judgment and tactics in litigation. He always had an uncanny "feel" for a case. (Obituary, *The Age*, Nov 20 1998 p22)

1. Introduction: Beyond Tacit Knowledge

When a lawyer demonstrates a 'feel' for a case, then, as in many similar situations, there seems to be a reliance on what has become known as 'tacit knowledge', arising from the recognition it has been given by Polanyi, and then by Schon, and then by many other writers concerned with the power of informal learning, arising in experiences. Underpinning these analyses has been the abiding influence of the later Wittgenstein, Ryle, and of course Dewey. In this paper, we want to take up the more detailed analysis of this sort of knowledge, but without resort to the temptation of the labelling of informal learning in some situations of ordinary experiences as 'tacit'. In attempting to de-mystify such knowledge, the danger is that ascription of 'tacitness' re-mystifies it. Clearly the use of 'tactics' and the reliance on the tacit are related, at least etymologically. In what follows, we want to preserve the centrality of the empirical activity that lies with, for example, a lawyer's 'use of masterful judgment', by enquiring of busy professionals what it is they find themselves doing, at work, in the midst of the 'hot action' (Beckett 1996). This we take to be significant in the light of the renewed interest in workplace learning, particularly in its informal manifestations (Garrick 1998; Boud & Garrick 1999; Hager & Beckett 1998).

One of the clear findings of this work is that an unusually large number of variables influence workplace learning (Hager 1997b). Such variables include:

- the workplace environment/culture
- authentic learning experiences
- quality of learning materials
- role of language and literacy
- company/business size.

This creates the problem of 'far too many variables' for researchers wanting to investigate workplace learning. What is needed is some manageable way of conceptualising workplace learning that draws attention to the main features of the phenomenon, while at the same time being sensitive to the potential contributions of the many variables that have been shown to influence workplace learning. Learning beyond the simple recognition of tacit knowledge requires, we believe, close attention to the presentation of the learning in the very experiences of the work.

2. The Research Project

In looking to the main features of the phenomenon of workplace learning, this research project concentrates on a central activity of people learning in the workplace, namely making judgments. Our hypothesis (below) is that making better judgments represents a paradigmatic aim of workplace learning, and that therefore growth in such learning is represented by a growing capacity to make appropriate judgments in the changing, and often unique, circumstances that occur in many workplaces.

Of course, the extent to which workers make judgments during the course of their work depends, amongst other things, on the way that the work is structured and organised. An assembly line, eg., is organised so that workers will exercise minimal judgment, therefore there will be little or no workplace learning. The much discussed 'learning organisation' maximises the exercise of judgment, and, hence, learning. Most jobs fall somewhere between these two extremes. This research project argues further that by theorising workplace learning in terms of what people actually do (make judgments), we can then take account of the effects of the many variables that influence workplace learning via their influence on such judgments. It turns out that the many variables that influence workplace learning are just the kinds of factors that are taken into account when judgments are made.

The proposal, then, is to study the performance of work in a range of occupations with a view to identifying and analysing the main judgments involved in individuals' work performance. What is a judgment? For the purposes of this research, we can say that judgment involves deciding what to believe or do taking into account a variety of relevant factors and then acting accordingly. More generally and technically, according to Lipman "[t]o judge is to judge relationships, either by discovering relationships or inventing them." (Lipman 1991, p. 16)

The research methods used to study work performances could include:

- observations of work performance
- interviews with workers about the judgments they make in critical work situations
- asking workers to account for judgments that others make in critical work situations
- examination of holistic competency-based assessment strategies that are in current use in some occupations to determine the nature and extent of judgment in these assessment situations.

For this paper, only the second of these methods - interviews with practising professionals (5 in Sydney; 5 in Melbourne) - will be utilised. These interviews are each of one hour and are taped, transcribed, returned for 'trustworthiness' revision, and will eventually be coded and gridded. For the present stage of this project, we have selected only some of the details from the first three interviews in both Sydney and Melbourne (6 of the total of 10). Women and men are equally represented in the six interviews, and the professional work covers: a psychiatrist, a private school principal, a nurse-turned-ambulance officer, a corporate consultant with education/training expertise, and two public servants with divisional-level responsibilities. We expect to have a more developed version of this paper for the UK VET Conference at Bolton in mid-1999.

Ethnomethodological research needs to be supplemented by strategies which 'get beneath the surface' of experience, rather than merely report it. Thus, reflective interviews, loosely shaped by common questions, which had not been revealed beforehand, with practitioners on their work performance, can be methodologically informed by Ferry & Ross-Gordon's 'think aloud' approach (1998). At a more profound level, such interviews draw upon the development of a Dreyfus/Benner interpretive phenomenology, but we are mindful of the debate over the resort to phenomenological analysis in research activity (see Crotty 1996). The ontological implications of a Husserlian 'thing-in-itself' would raise for us some substantial philosophical objections (but not in this paper: basically we, like Carr 1998, take the traditionally ontologically objectivist view that there is a mind-independent reality).

2.1 PROJECT AIMS AND OUTCOMES

The primary aim of the research is to establish the usefulness or otherwise of **the major hypothesis that workplace learning is primarily a growing capacity to make appropriate judgments in the particular circumstances that occur in one's workplace.**

Subsidiary, and subsequent, aims of the research are to identify major factors that shaped the judgments and to study the range of propositions offered in explanation and/or justification of judgments. These propositions will be analysed in the light of Dewey's seven kinds of propositions (discussed later).

The final aim of the project is to develop a model of workplace learning centred on judgments.

The main outcomes will be:

- the testing of the major hypothesis in a diverse range of occupations
- identification of the types and bases of major judgments deployed in the occupations studied
- the development of model of workplace learning based on judgment. This will likely lead to further research to refine and test the applicability of the model.

2.2 RESEARCH QUESTIONS

How well does a hypothesis of workplace learning via judgment account for observed performance in a variety of workplaces?

How well does a hypothesis of workplace learning via judgments account for the testimony and understanding of workers of their own and others' performance in a variety of workplaces?

How well does a modified Deweyan theory of propositions account for the propositions that workers employ in explaining and/or justifying their workplace judgments?

What model of workplace learning best accounts for the above findings?

3. Theoretical Background

3.1 WORKPLACE LEARNING AND A LOGIC OF ACTION

The beginnings of a model of workplace learning via judgments have been suggested in previous work (Hager 1996a and 1997a). This model possibly can be extended by ideas from Dewey's hitherto neglected logic (Burke 1994) and its account of judgments. Traditionally, logic was concerned centrally with universal propositions, which were also the mark of the highest forms of knowledge. In this scheme, judgments were also propositions. On this approach, workplace learning is of little interest, since, at best, its particularities are but distantly connected to the ideal of universal knowledge. Thus the problem becomes one of accounting for how practice is connected to theory. Notoriously theory/practice accounts of workplace judgments have repeatedly failed (Hager 1996b).

Dewey's logic, however, is a logic of action, which repudiates the theory/practice dichotomy (and cognate dichotomies such as discursive vs practical). It also distinguishes propositions from judgments. With the development of artificial intelligence, robotics, etc. the field of logic is finally turning its attention to the logic of action and Dewey's ideas are starting to receive serious scholarly attention (Burke 1994). In a logic of action, vocational (or professional) knowledge is no longer placed at the periphery of knowledge. Such a logic does not invert the order of traditional logic and privilege the particular over the universal and the practical over the discursive. Rather it incorporates all of these and rejects as false dichotomies theory/practice, universal/particular, discursive/practical, etc. (Hickman 1990).

A model of workplace learning via judgments that is proposed to be developed and tested in this research project builds on the work of Lipman (1991) and Nonaka & Takeuchi (1995) as well as that of Dewey. As against traditional logic's reliance on the universal/particular dichotomy, thereby shaping what counts as 'real' knowledge, this model will feature a much more sophisticated account of the kinds of propositions that are relevant to knowledge. Dewey's logic identifies seven sorts of propositions, only one of which is particular and two of which are universal. However, three of these are what Dewey calls "specific" and four are "general". All of the types of Deweyan propositions are potentially relevant to workplace judgments, and, hence, may become part of the model.

Dewey's seven kinds of propositions (Burke 1994, pp. 178-9) are:

1. A **particular** proposition attributes a *quality* to some ostensible thing in a given situation. ("That is twinkling." "Its position is now abcxyz.")
2. A **singular** proposition classifies something in a given situation as being of a certain *kind*. ("That is a planet." "It is now in retrograde motion.")
3. A **contingent-conditional** proposition states a conditional link among singular things of various kinds in a given situation. ("If that moves, it is a planet." "If that comet does not go away, these crops will wither.")
4. A **generic** proposition states that a relationship holds among kinds instantiated in a given situation. ("All planets are stars." "Comets are ominous." "Most stars are fixed.")
5. A **contingent-disjunctive** proposition differentiates a kind into a disjunction of subkinds, with an eye toward developing some working taxonomy of kinds in a given situation. ("Stars either wander or are fixed.")
6. A **universal-hypothetical** proposition states a relationship *in principle* among *modes* of being. ("All celestial motion is perfectly circular.")
7. A **universal-disjunctive** proposition exhaustively partitions a mode into constituent modes, but as a matter of principle. ("All changes are of four sorts: locomotive, quantitative, qualitative, or substantial.")

3.2 WORKPLACE LEARNING AS PHENOMENAL EXPERIENCE

Experiences of working life are manifest in daily practice and decisions caught up in and expressed by what can be called 'hot action' (Beckett 1996). These experiences are typically judgmental in that a series of actions issue from deliberations over 'what to do next', when faced with the usual routines and contingencies across the working day. If these actions are 'right' (efficacious, appropriate and so on) it is perhaps mainly because they achieve what was contextually suited. There is in all of this what psychologists in VET are now exploring as 'situated cognition' (McLellan 1996, Billett 1995), but the pilot project will also pick up the increasing interest in the social and affective aspects of these judgments (Karpin 1995, Mumford 1993, Bowman and Jarrett 1996), especially the idea of 'flow' (Csikszentmihalyi 1992; Goleman 1996), and of the role of 'attention' in human learning (Winch 1998)

In these judgments, individuals 'attend' to their total perceptions of their workplace: cognitive (reason-based), affective (feelings, wants) and social (group and team allegiances) dimensions of these perceptions are only artificially separable. We want to maintain the integrated, organic nature of these perceptions, so that their (literal) 'integrity' is the focus of the empirical investigation of practical judgments. To that end, phenomenological analysis - the imputation of meaningfulness in experience - will be an essential part of the methodology.

Moreover, there is empirical evidence of this phenomenologically-significant organic, or integrated workplace learning, in more holistic notions of competence (Hager and Beckett 1995), of training (Sefton et al. 1994, 1995), of professional development (Beckett 1998b, 1998c), of assessment (Hager 1997b) and of training packages (Down 1998).

4. Findings & Discussion

Clearly, a handful of interviews will not provide any generalisable data, but that is not the point of the project. Practitioners' reflective reports of their decision-making may help identify emphases in the making of workplace judgments which can be mapped across Deweyan structures, and some conclusions drawn about their the adequacy of those structures. At the very least they may help us identify their deficiencies.

Following Dewey's idea that propositions of various kinds underpin and contribute to judgments without thereby constituting them, we can identify a range of such propositions relating to scenarios which each interviewee was invited to relate. Here is what was related by the corporate consultant with expertise in education and training can be mapped across Dewey's propositional structure:

D1 "This training system is very complex" (Scenario 1), "This situation is delicate" (Scenario 2).

D2 "These staff may be in danger of being made redundant" (Scenario 1), "These training materials are inappropriate for this organisation" (Scenario 2), "My business plan is still on track" (Scenario 3).

D3 "If this training system is implemented, business outcomes should be enhanced" (Scenario 1), "If I am too precipitate in pointing to the unsuitability of the training materials, I risk alienating senior staff" (Scenario 2), "If I take this consultancy, I risk compromising my educational principles" (Scenario 3).

D4 "All basic training should match up with work roles" (Scenario 1), "Most staff are disaffected with the present training arrangements" (Scenario 2), "All consultancies should fit in with my philosophy" (Scenario 3).

D5 "Training systems either cater for specific work roles and corporate outcomes, or they are of very doubtful value" (Scenario 1), "Consultancies should either fit in with my philosophy or be avoided" (Scenario 3).

D6 "Not all training needs are well served by off-the-shelf training materials" (Scenario 2),

D7 "Training needs should be met by a mix of internal and external provision" (Scenario 1).

However, while these propositions and others like them (which we can group as broadly 'cognitive') no doubt contributed to the judgments, there were also other factors that were not wholly propositional. These are conative ('of the will'), emotive and ethical factors. The rest of this paper will discuss these, and then only under one (central) aspect: ***to what extent and in what ways do interviewees adduce these (non-propositional) factors to their growth in capacity to make judgments?***

Taking the nurse-turned-ambulance officer as an example, we find in this scenario below a whole series of 'decisions' (i.e. judgments) which are saturated with conative, emotive and ethical considerations. Moreover, in this first paragraph, her own feelings are clearly not uppermost in her reporting of the scenario - her ambulance-officer partner, and the family are significant here. Later on, when she is asked about that, she is able to articulate three-stage growth in how her non-propositional experiences have related to her judgments.

> ...And the little baby certainly wasn't breathing. The first decision is - do you start resuscitation or not? And there's a whole set of rules that we have about when you do and when you don't start resuscitation. So I made the decision to start...My partner was more frazzled by the situation than I was. He and I had an interesting relationship at that time because he was in a superior position, theoretically, but in practice and knowledge I was ahead of him. So that made it awkward, and he knew that. He felt very uncomfortable about it, and I did too - because of the way he treated me because of that. So the relationship was on the face of it harmonious, but it had some undercurrents that made things difficult. And this resuscitation brought those out because I'm used to resuscitating children, and so I just went into that role. And he wasn't, and he didn't. So we resuscitated the little baby, and we actually got an output, which means that we got some heart rhythm back - which in these circumstances was very unusual and quite unexpected - well not unexpected but unusual. And so another crew arrived, which was the intensive care crew, and so they helped us to continue to resuscitate. Eventually we had to stop.
>
> So I suppose decisions that I made were things like- which equipment to use and when; how to help my partner through it, because he obviously wasn't coping very well with it. He had little kiddies the same age, so apart from the conflict he and I had, I could see it was hard for him anyway. Then dealing with the family obviously was difficult. It is very difficult in the ambulance world because they actively encourage the family to stay around for resuscitation, whereas in nursing they are not as progressive in that way. So it is very difficult doing resuscitation with the family watching, than it was in a hospital where you put them out the door and when it's all over you bring them in again. So during the resuscitation, I had to decide when to speak to them - and when you know, when you're pretty sure that you're not going to get the little baby back - you give them a warning before you stop. And so you have to decide when to do that and how to phrase it.

And there's a decision that we've made collectively as a group of officers about whether to stop the resuscitation or whether to keep it going or not.

CH - You do that collectively?

TT - Yes. Once it's all finished, you talk to the family about it. and give them some time with the baby. And there's a whole set of protocols about where you take the baby's body and call the police.

CH - So the police arrive while you're there?

TT - Yes they did, and that's routine.....
...it's difficult dealing with the death of children obviously. But I've developed some techniques for dealing with that.

CH - How have you done that?

TT - Through exposure I suppose and exploring how my feelings play a part, particularly in my decisions, because after I've been in a situation where I make judgments about things, or just my everyday job - this is from quite a few years ago I started doing this. Looking at what role my emotions played in it, and I found that the more dissatisfied with how I performed, I was, the more my emotions had played a less than constructive part in the job. So I don't believe you can keep your emotions right out of it or have your emotions controlling the situation. And I think you need to have a balance somewhere in between, and so I'm getting to the point - and I'm practising it - I don't say I do it that well - actually I like to think I do it pretty well. I find it easy to do a job now and keep my emotions right out of it, and think about it later on. And I think that's a step up for me from having my emotions play a part and affect my judgments. And that's a step up from not having your emotions in there at all.

So now I'm getting to the point where I like to be able to feel my emotions at the time, and still have them not impact upon the appropriate judgments and the decisions that I make - and that's complex.

Notice that this is a long way from support for anything like tacit knowledge (inarticulate, ineffable arcana) in judgment, but it does acknowledge a rich array of conative, ethical and emotional factors in the 'hot action' of the scenario outlined.

If the action is cooler (where there more time for reflection), does tacit knowledge gain a toehold? In the following scenario, it initially appears - as instinct - but then it is substantially qualified by growth in experience, with conative and emotive ('feelings') factors acknowledged but corralled. The interviewee is principal of a large private school.

DB - ...Where you get resistance to decisions - perhaps with staffing implications - that people wouldn't be comfortable with, or parents not comfortable with, and people land on your doorstep with a gripe, what do you bring to the resolution of these situations?

NH - I bring to it an instinct - an instinctive feel for how it fits within our culture and how it fits within our future. Now of course I don't think that I'm conceited because I actually argue with myself all the time but obviously I think my instinct is right. ...

DB - And you'd have a series of these decisions across several days or across the working year, which could be routine for you, because they are utterly consistent with the way in which you read the situation, or read the culture.

NH - Yes.

DB - Where the organisation has faced external constraints such as the planning difficulties I read about with your extensions and development - that kind of thing - when you have to make judgments of an overtly political nature involving the media, the local press, and so on, what do you bring to those sorts of judgments?

NH - Well you already know what your own plan is in terms of you seek advice what you're prepared to do. What is right to do – what is ethical and appropriate. And you may have noticed if you are local that I made a decision very early on that I wasn't going to talk to the press. So that was the end of it. But it has been in the press with the comment that the principal hasn't returned a call or wasn't available. That's fine.... You have to know what you're doing for your own organisation is right in the first place. You have to be very sure about that.....

DB - .... I wanted to build on the idea of what I take to be reliance on intuition.

NH - Right. Huge. Huge.

DB – So when I say, and you say, 'the reading of the culture', a lot of that is intuitionistic?

NH – And a build up of that experience. If you'd interviewed me say six or seven years ago – different, different totally.

DB - But can we formalise that more in knowledge-based terms so that you can say - 'Look I'm the principal and I've got this depth of experience: It's different from when I started the job. I'm able to say just by rule of thumb. I can exercise judgments that I know are going to be more or less effective'.

NH - Oh yes.

DB - So even against the odds you might pull something off with the council, staff, or people within the community because you backed a hunch that you could really formalise this knowledge.

NH - Oh. I do that quite a bit and I'm always pleased when it's something that is my idea, that a lot of people didn't want at the time. We just sort of say OK well we'll try it and the people find they actually do like it. However we also try and work in a team way on a whole variety of decisions but another thing I'd say, I can't remember in my ten years working with the school council (and their culture has changed too and some of that would be my influence...), I can't remember anything that I've asked for that doesn't happen. ...

DB - Now, based on that, I'm picking up the feeling that it's important for you that a challenging judgment is something that shouldn't really arise in an ad hoc or unforeseen fashion. It's very important to have it thought through, deliberated upon, well-resourced, justified, and so on. So I'm wondering if in the daily course of your work there is very much reliance on the emotions, feelings.

NH - What sorts of feelings?

DB - Trusting them.

NH - When it comes to trusting them?

DB - Yes, instinct is fine, but this sort of warmer, fuzzier idea of feelings.

NH – No I don't think so - not if it's got to be cool objective thinking..... I think I'm being utterly objective when I can disassociate myself from feelings, friendships, and other alliances and say look at the big picture, look at this, look at that. So no I don't think so.

DB – So if somebody walked in to see you and they had a particular problem and they dissolved into a flood of tears - would you be less likely to modify the point of view that you had?

NH - I don't know. I'd - depending on who it was - I'd put my arm around them and want to solve their personal problem first and then deal with the rest of it... Two other things, unrelated but maybe not, I love it when someone walks through my door and says 'I've done something terrible: I've got the most dreadful problem you can imagine', because I instinctively know it's going to be the most easy thing to solve of the lot.

But secondly, if someone - as will happen today - walks through my door for an interview - then when I'm choosing people for interview to come and work here, as you know from research, the CV goes out the window the minute they come through the door and instinct takes over but also a little bit of that is feelings. And even though they may not fit your criteria, they're some of the most critical judgments I ever make for the school - picking the right people....It's my principal job - getting the right people into this school.

What seems to be emerging is a distinction between the role of, and evidence adduced towards, making a judgment, in, first, an initial situation where the need to make a judgment is presented, and, second, a contiguous situation where the actual judgment is made. Interviewees seem to be able to distinguish between a cluster of conative, emotive and ethical factors relevant to the framing of the initial situation (instinct comes in there, but so does propositional knowledge, presenting as past experiences), and a cluster of these factors relevant to the framing of the judgment itself.

In this third scenario, the action is midway between the heat of the emergency resuscitation, and the cool of the private school: the interviewee is a psychiatrist. She carefully separates the two situations (diagnosis and treatment, in this case) drawing on several conative, emotive and ethical factors, but packaging these adroitly as sociopolitical considerations, which actually determine the clinical response to the medical diagnosis.

CH - When you need to make a decision, how do you decide what you're going to do? I have a few examples. Do you decide based on intuition - perhaps a feeling? Do you have an ethical response? Is it a cognitive principle? Or is it possibly a blend?

LB - It's obviously a blend of all three....The first information I have is theoretical knowledge of the situation - of someone who has a psychotic illness - I know a lot about that. I know what is optimal, and I know what is necessary. Now what I actually do has to be based on an ethical system as well, and it has to be based on the legal implications and responsibility, in terms of the care. So there are many factors in this. But the major thing that directs what you do in this clinic - the clinic in which I work - is the facilities that we actually have for carrying out what is necessary. And so it's a blend of all those things - the practicality of it, the needs of the patient in the given situation. Now if you wish to speak optimally for the young man who was in withdrawal, the optimal situation would be for him to be placed in reasonably long-term care - and quickly, treated medically, withdrawn from his drugs, and then put into a program which would protect him to a degree from his capacity to use drugs further. So he couldn't in fact get them, and would be given long-term rehabilitation. Now none of these things exist at the moment. So these are the things that you have to weigh up, but what you end up with is a totally unsatisfied arrangement where he was allowed to go - allowed to leave, and then overdosed, shortly afterwards. ....

CH - So you're saying that your judgments are curtailed by what's available.

LB - What we can actually do, what positions we reach, are based on the practical availability of the services in the end.

CH - When you're presented with one of these situations, do you find yourself trying to fit this particular instance into a familiar pattern, or sometimes do you find you are trying to establish a new pattern to meet the specific instance?

LB - There's a familiarity in the cases that are presented to us. They're all very much the same in many ways due by the nature of the illness these people suffer. There is familiarity at that level. The differences occur in terms of the social milieu from which the people come. Because we are accepting the most handicapped people, from the poorest level of society, there is also familiarity of the patterns because these people are all on welfare. They're all unable to work. The vast majority of them have got into the hands of people involved in drug use. So all these situations are becoming familiar and have become quite familiar over the last five years. But this is quite different to say ten years ago.

CH - Just thinking of the young man - the way you described how you coped with his situation. Do you think that was a spontaneous response? The way you described it, it was - it was very unfamiliar and you really had to come up with some 'out of left field' response.

LB - Yes, that's unusual because the drug services have recently been cut back from that area. Once upon a time there used to be services for acute withdrawal patients - to help people with drug addiction. And now they don't exist. They only exist if people are capable of waiting, and capable of fulfilling all these conditions drug and alcohol services put down. Which in fact keep the people away from care because they can't fulfil the requirements. They can't wait till 5 o'clock and ring up every day to check whether there is a place or a bed to use for them in a particular institution. They don't have the money. They don't have the telephone. They don't have the capacity to do it.....

CH - When you decided to give him those drugs, and you were thinking about it - did you find yourself thinking - if I do this, this might happen. Or if I do this, this will. Is there a certain scenario that's going on in your head?

LB - A definite scenario because we knew he came in specifically to get benz. We knew that if we didn't give the benz, he'd be in worse withdrawal. We knew that it was illegal in crisis to prescribe the amount of benz that he was in fact taking. So we couldn't even prescribe a sufficient dose to cover his withdrawal. So we knew that by giving him a dose supply he'd take the lot at once, and probably go out and go to another doctor and get more, or steal them, or buy them in the street. We knew that would happen and we weren't surprised when we heard he had a major drug overdose shortly after.

[pause]

There is spontaneity instar as you've seen most situations before and you're familiar with them and you know what the procedures are and the way to approach. Given unusual scenarios, like the situation with this drug victim, there's not much that we actually spontaneously do because we always discuss it. So that, for example, I had long discussions with another care worker at the time the young man presented. So it's very rarely that we do anything without considerable talk. So it's not spontaneous. It's usually mutually decided and agreed upon, and if there's any doubt about the ethical nature of the problem, or you're really concerned, you go to a more senior consultant, and discuss the situation before you actually act..... There's not a lot of responding to the person and the problem. In fact that's what you have to make a lot of distance from. You really have to take into account lots of factors. The more factors you know, the more you take into account.

CH - So you don't believe that you act spontaneously - it's very much a calculated thought, based on your experience, most of the time.

LB - Yes. With people who are working in a field - very specialised fields for a very long period time. As I've had 35 years of experience, there's not a lot that's new. It's just variation and many of the responses that I would give now are thoroughly learned responses which have become a part of me. So that I don't have to think the way someone who's greeting the situation for the first time has to think. If you watch people coming into this and observing what we're doing, they're quite nonplussed. They're quite confused, disordered, distressed by it all because they tend to be more reactive to the patient who is often in extreme distress. But once you've been doing it for a long time you tend to distance yourself from that. You don't get involved at the distress level. So you're not reacting.

5. Conclusion

At this early stage, perhaps we can claim that growth in capacity to make judgments is evident in (a) an ability to separate the stage of the presentation of the initial need to make a judgment, from the stage of the contiguous actualisation of that judgment; (b) an ability to 'read' the conative, emotive and ethical considerations in the light of that separability (such considerations will be factored in differently for each stage); (c) the de-centring of the practitioner's sense of identity at one of these stages, but not in both of them.

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WHO'S LISTENING, WHO CARES?

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ABSTRACT

Professionalism and the current national interest in vocational education give AVETRA legitimacy. But have we made a difference? Issues that inhibit and enhance the value of research are discussed as well as how to communicate research results to achieve higher effectiveness of research outcomes.

Introduction

AVETRA has been given legitimacy by our interest, initiative and the national concern with vocational education. But have we really made a difference? Who is listening to us, who cares? Are governments, their agencies, vocational educational institutions, taking note of our work? If the answer is not many, what do we do? We should answer this question before others ask it in a less than collegiate atmosphere. As a consequence, this paper highlights a number of issues that influence the acceptance of current VET research.

It is important we have vision. It may be only us who can offer real solutions and not band-aids or palliatives in the current socioeconomic circumstances. To make this difference we should continuously note ways of becoming astute activists, promoting discoveries in, and observations about vocational education while continuing as resourceful researchers, in an area that is too important to leave to chance or less experienced players.

The World and the Research Context

What is the context of our work? It is an empiricist world categorised by ideology and utilitarianism, where economic rationalism is a panacea with 19th Century factory style answers to 20th Century needs. It is a world where efficiency practises seek to circumscribe everything from government and commerce to schools and hospitals. People are acknowledged more for their utility and less for their social value; we are all for sale. While many decision makers acknowledge faults in current ways of managing the economy, work and the general well being of the population, they seem incapable shifting to a more human model (Colebatch 1998, 13).

Slattery notes just how profound the changes to our the world are:

> The changes under way in our intellectual world are as profound as any experienced by the [19th Century] Victorians: the weakening of disciplinary boundaries, the call for more socially engaged curriculum, disputes over the nature of truth, and over and above it the explosion of knowledge, or at least information. If we are to believe that great sage of post-colonial studies, Edward Said, we are in the midst of a near-Copernican intellectual revolution (Slattery 1998, 13).

This quote highlight's what many currently experience. Life is hard yet remains rewarding for many, albeit perhaps intellectually rather than financially. The question iterated here is a perennial one that most social science researchers ask: is our research heeded? One answer is that it depends on the type of research and what it is designed to do.

Modes of Research

Some research informs while other types intend to initiate change. Vielle in Reimers and McGuinn (1981, 81) described four legitimate research models within the social sciences. The list is by no means complete:

Academic research: uses a rigorous testing of a hypothesis based on one or more concepts to find if and how well, some system, model or theory is viable or working. It helps people understand why things are the way they are. This type of research we would expect decision-makers to 'note'-that is, incorporate it into their general conceptualisation of VET.

Planning research: is often used by policy makers and attempts to answer questions that seek to find what factors will be likely to produce a desired result. It tries to generate patterns, often using statistics to ascertain the relationship between variables. If policy makers value this sort of research we would expect results to be acted upon or at least a response explaining why no action was taken.

Instrumental research: is that which frequently uses trial and error experiments to discover factors that produce a desired result. It asks the question, What if...? It may involve leaps of faith but it incorporates notions of rigour and control. Here decision-makers and practitioners to demonstrate through practice what they have learnt from our findings.

Action research: uses direct interventions in a real life setting to achieve specific changes. It aims at improvement where the objectives are outcomes. It may lack rigour but doing what seems right may be more important than a learned trial, or experimentation with checks on validity. Here we would want to see some follow up or longer-term evaluative work undertaken.

The Hazards in Selecting a Research Topic

Prior methodology selection is the choice of research topic. If we are contracted this will hardly be an issue, though whether we want the contract is affected by our interests and capabilities. But in independent research who chooses the topic? Are we researching in the right areas, or are we being led by our interests, fashion, or serendipity and not the needs of our audience? In a recent paper reviewing Anderson (1997) on training markets Robinson (1998) wrote:

> ...there has been a lot of commentary on the issue of training markets, very often motivated by the particular philosophical stance of the authors (or, more correctly commentators). What is missing is a body of dispassionate and analytical research into actual effects of training markets in Australia (Robinson 1998, 8).

and

> An example of the 'missing' factor in research is a general absence of data, both qualitative and statistical, on the implications for public and private provider balance (Robinson 1998, 10).

Robinson (1998, 13) additionally notes some specific research gaps by quoting Kearn (1997). These included research on flexible delivery including its practice and barriers to its practice, as well as adult learning principles, economic and social principles for lifelong learning, delivery modes and/or the implications for training outcomes. Robinson also cites Docking (1997) on the low level of hard research in the area of competency-based assessments, for example, there is almost no data on the quantity, scope, and quality of training received by those undertaking competency-based assessments. Also noted was a need for research on the relationship of individual learning style to assessment.

The field of quality was an additional area noted by Robinson who commented:

> ...there is a need to evaluate the range of [quality assurance] approaches being adopted within the [VET] sector before any one approach can be recommended (Robinson 1998, 15).

Should researchers be totally led by those funding VET research, no matter how well formed their vision, as noted by Anderson and Biddle (1991, 5)? The answer is no. There must

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always be room for independent research, those willing to follow a hunch or act on inspiration flashes on what might be a useful field of investigation. This can lead to innovation; it can also lead to professional obscurity.

Credibility of the Researcher and the Nature of the Audience

An impediment to having research noted, and perhaps seeing it acted on is that teaching is generally considered a low status profession. This in turn affects the credibility of VET research done by educators with an education focus in favour of that which has an economic, management or business orientation. As a result, research can become highly politicised where often-traditional researchers in the field are perceived as slow to respond, and therefore out of touch, to the needs of implementers. Decision-makers do understand relative demands but they too are under pressure meeting tight government time lines and budgets. This means that decisions are based on general impressions of what is needed, perhaps assisted by an inquiry or two, or reports, and not on valid research findings. This can be seen in the world of VET over the last ten years in Britain as well as Australia where major changes have been introduced based largely on ideology, the perceptions of industry and the new bureaucracy, but not through the influence of thoughtful work by education researchers.

There appears to be also a subtext that controllers of the national VET system want only the good news and are highly defensive of any criticism or critique. There seems to be an atmosphere that there is more interest in visions of the system than its perfection in an applied work/industry context, and that truth may be expensive, troublesome or an irrelevance. As Barnsley wrote in 1998:

> The attention of the individual is caught and held by many contradictory "Truths", via advertising, the press, television, the Internet etc., concerning religion, art, medical health, products and politics; the individual literally does not know what to believe, and may internally reconcile the contradictory "Facts" by no longer accepting universal truth, and instead accepting their own "Opinion" as fact. Examples are provided by the fierce debates over abortion, evolution vs creation theories, global warming, and the so-called science debate between the social constructivists and scientists... (Barnsley 1998, 2).

In such circumstances researchers have to decide what is truth, then display it as findings to groups who, if they don't like the proffered version of facts will find others more suited to their political, economic and social vision. This leads to another outcome of economic rationalism where applied research is favoured at the expense of the implicit value of basic inquiry. Cartwright, in Anderson and Biddle (1991), suggests that this activity is misplaced and in a social science context, if research funds were reapplied to fundamental research as distinct from applied research:

> ...there is no reason to conclude from past experience that methodological improvements would be retarded (Cartwright in Anderson and Biddle 1991, 24)

Another aspect of research is the assumption researchers make about how an audience will use their work. It might be quite different from the researcher's intention:

> Evidence suggests that government officials use research less to arrive at solutions than to orientate themselves to problems. They use research to help them think about issues and define the problematics of a situation, to gain new ideas and new perspectives for future policy actions (McCormick Adams, Smelser and Treiman 1991, 32).

It is this process of 'seepage' that can change the whole government social agenda over time.

The Nature of Organisations

The platform of our work is the organisation. Organisations are not to be taken at face value, as they are complex human arrangements. One way to understand them so a researcher can deal them with better is to consider them as a form of theatre where research aids the performance. Bolman and Deal (1998) assert that theatre in organisations is an essential state and is a mask for real activities, as they often do not do the work they are supposed to and may be quite dysfunctional:

> The idea that there can be activities without results casts doubt on a substantial proportion of human endeavour. At first glance such a heresy might seem wholly negative...
>
> Organisational structures, activities, and events are more than simply instrumental. They are part of the organisational theatre, an ongoing expressive drama that entertains, creates meaning, and portrays the organisation to itself.
>
> Internal theatre also plays to an audience outside the organisation. It signals to the outside world that all is well (Bolman and Deal 1998, 94).

This description presents no problem for research as it fills a confirmatory role in many cases.

> Organisations need to undertake evaluations if they are to be viewed as responsible, serious, and well managed, even though the results of evaluations are rarely used for decision making. Evaluations are used for other purposes. Evaluation data can be used as a weapon in political battles or as justification for decisions that would have been made in any event. Evaluation fosters belief, confidence, and support from external constituencies and benefactors (Bolman and Deal 1994, 102).

This statement would be as justified if the words evaluation and evaluator were replaced with research and researcher.

Does this point of view incapacitate researchers? No; there should be honesty with balance as to how an organisation might use research. This should not threaten researcher integrity. It does mean the researcher should constantly listen to the research host and be prepared to use diplomacy but never compromise.

> The evaluation process often takes the form of high drama. Prestigious evaluators are hired, and the process receives considerable publicity...
>
> New roles [the theatre metaphor again] are enacted: evaluators ask penetrating questions, and respondents give answers that portray the world as it is supposed to be...
>
> Occasionally, an evaluator blows the whistle by producing a highly critical report [an absence of diplomacy?]. The drama then becomes a tragedy that is often injurious to both parties. (Bolman and Deal 1994, 102).

Here is a guide to research if it is to be effective, whether by supplying a particular answer or by adding to the pool of knowledge. It should be a non-direct assault for in research we are telling a story, not real life. It may contain some truths that implicitly suggest a plan for action, but it is rarely the truth. This view is supported by Davis and Maxcey (1998) who wrote in their definition of Post-modernism (Post-modernism being modernity without the illusions).

> ...research methods were fraught with emotion, intuition, imagination and qualitative judgement (Davis and Maxcey 1998, 2).

Another perhaps more conventional way of looking at organisations is to think of them as systems.

One of the common characteristics about organisations is they are open social systems that have a requirement for two things according to Daft and Weick (1994, 71-89). The first is to obtain information; the second is how to interpret it. The way an organisation gathers and processes information is in three stages, first by scanning (data collection), then by interpretation (data is given meaning) and finally by learning (demonstrated by taking action). Research can often fill gaps in stages one and two. How information is collected depends on the type of organisation. Daft and Weick describe four of these: enacting, discovering, conditioned viewing and undirected viewing. Each will handle data from sources such as research, in different ways. One characteristic common to each model is the belief their operational environment is unanalysable- an enigma.

Enacting style organisations have an active interventionist approach to their environment trying to construct it to suit themselves. They do this by experimenting, testing and ignoring what has gone before. They try and develop new products and create a market for them. In the current context it could be that ANTA falls into this category with New Apprenticeships and Training Packages being the innovative products.

Discovering style organisations are also intruders into their environment. They survive by detecting solutions through research or other probes sent into the environment. A research-focussed university is an example of this style organisation. It works at the frontiers of many knowledge fields searching for answers. The style of research it prefers is highly valid, ethically correct, logical and conservative.

Conditioned viewing organisations prefer standardised data collection from traditional sources. They make the assumption, sometimes to their cost, that the environment is benevolent. This style of organisation often takes the form of large industry or industry bodies. Research may be logical, outwardly useful but not valid in the classic sense.

Undirected viewing organisations try not to be intrusive in data gathering tending to rely on informal and personal networks. Examples of this organisation are those found in medium to small industry. Research often takes the form of expert committees of inquiry with government, industry or even self-appointed members, for example ITABs, formulating likely solutions to problems. Research often depends on existing statistics and knowledge, experience, networks and folklore, where any academic inputs may be discounted or considered irrelevant.

Matching the mode of research to the organisational type is prudent. For example, enacting and discovering style organisations might be expected to prefer academic, planning and instrumental forms of research. On the other hand conditioned and undirected viewing organisations may be more sympathetic to instrumental and action forms of inquiry.

Communicating the Results

In communicating results the prime vehicle is still the written word. Some types of writing do not help the VET debate while others do. Here is an example of each, the first is on the topic of regional VET, it has a style of comment typical of some of semi-official government journalese:

> The project *(title deleted)* examines whether models of vocational provision constructed to service one sector, as opposed to mutualities of sectors, may mitigate against attempts by non-metropolitan Australian communities to reposition themselves economically and socially in a globalised economy. If so, a more inclusive definition of vocational education and training may more accurately describe the true value of such activity and its benefits to communities in their quest for economic and social sustainability (ANTA 1998, 22)

This example allows the power of the message to be lost in complex words. In its defence, writing such as this often is not plain because it has to satisfy a number of purposes, but nonetheless a simple message has been made obscure. This is not rare nor is it confined to official publications. It might have been better if simpler expression was used allowing the reader the opportunity to create multi-word synergies of precise and elegant meaning such as that suggested by this quote:

> In its report on the VET system in Finland, the Organisation for Economic Cooperation and Development (OECD 1995) identifies several advantages of moving towards a national higher education model which incorporates separate systems of university and non-university institutions offering academic and vocational education respectively. In particular, it highlights the increased diversity, flexibility and responsiveness to changing industry and community needs that a dual system potentially offers. Conversely, equally strong arguments could be mounted on social grounds for developing an integrated system of higher education in which the distinction between academic and vocational education is blurred (Anderson 1998, 29).

In this instance synergies are developed by simple ideas, clearly stated, that are likely to promote discussion and address questions such as: What would such a VET system look like in Australia? Is such a model better than the current one? The debate might be interesting, intense and productive, something not possible in response to the first quote on account of its vagueness.

On writing and style Strunk is quoted in Strunk and White (1979):

> Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make all his [or her] sentences short, or that he [or she] avoid all detail and treat his subjects only in outline, but that every word tell (Strunk and White 1979, xv).

Finally, at the end of the research comes the report, the aggregation of results. Never forget its importance and purpose. Final reports are not only for reading, part of their function is to justify the expense of the research, providing physical evidence of a completed task. Sometimes their sheer bulk is enough to impress, serving a political purpose quite separate from research goals. It is also evidence of a researcher's ability. However, final reports may not produce the outcome imagined by the researcher. On the other hand, short interim reports are better for disseminating findings, and a one or two page information memo dropped on the right desk can enhance a researcher's reputation and project outcomes immeasurably. Stopping by an office of the host with some hot, not yet printed, information has the same function. Giving out information at mandatory reporting dates is often no more than ritual. The overriding rule in reporting is to give people tools not tomes.

Conclusion

Who's listening? Who cares? Who knows? But if VET practitioners and researchers do not learn to use the right strategies, politics and languages the answer will be no one of significance.

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QUALITY VOCATIONAL EDUCATION AND TRAINING: WHERE DOES STAFF DEVELOPMENT FIT?

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ABSTRACT

This preliminary review of literature on VET staff development underpins a national project exploring links between employment modes and staff development. Three key themes are distilled: changing VET context, increasing non-standard employment and shifting models of staff development. The paper then explores issues arising from each of these themes.

Introduction

This paper presents the preliminary findings from a literature review focusing on the role of staff development for teachers and trainers in the vocational education and training (VET) sector. This review underpins a study (funded by the National Research and Evaluation Committee) examining links between the nature of staff development and quality in teaching and learning. Our work is being undertaken in parallel with a 'scoping' exercise on current programs (Choy, Pearce and Blakeley 1999) and a Delphi study on roles of VET teachers and trainers (Smith and Hill 1999). This paper focuses on three key themes emerging from the literature and their implications for the nature and availability of staff development.

Theme 1: The changing context of VET

VET teachers and trainers have been subject to unparalleled change in the last ten years. These changes have been largely driven by three core beliefs: that the VET system prior to the mid-1980s was not capable of delivering the training needed to create a flexible, skilled workforce in an increasingly globalised economy, that the competence required by the workforce could best be developed through real world activities; and that ways needed to be found to increase the skills base of the Australian workforce (Hawke 1998).

Reforms since the mid-1980s have included the following (OTFE 1998: Simons & Harris 1997):

- a competency-based training system
- development, and re-development, of national frameworks for provider registration
- development of a national system for accreditation of courses, now replaced with Training Packages
- moves to a more industry-led VET sector and an increase in provider responsiveness to client (industry) needs
- development of various systems of entry level training
- development of an open training market, with private providers and *User Choice*
- strategies to enhance access to VET for under-represented groups
- new learning technologies with implications for course delivery
- public sector reforms resulting in a range of responses including amalgamations and restructuring.

VET teachers and trainers are now working in a system characterised by increasing competition between providers, calls for greater accountability and the need to develop cooperative and flexible responses to clients. In addition, many enterprises are now involved in VET delivery across a range of industries. Teachers are increasingly involved in arrangements where their services are 'sold' to meet a variety of training needs in local industry and in overseas countries.

These changes have resulted in a fundamental shift in the notion of a VET teacher. It is difficult now to define their work in terms of numbers of classes or students. In many instances they are working part-time. The role is being filled by persons who have a range of qualifications and who are working under a variety of non-teaching awards and conditions (ACIRRT 1998, 8).

The literature dating from the beginning of the reform process suggests that the management of change has presented considerable challenges for all involved. The pace and scope of change has been variable (Chant Link & Associates 1992; Brough 1993; Allen Consulting Group 1994). Significant difficulties have emerged in attempting to balance the needs of industry with those of individuals whilst at the same time ensuring that a nationally consistent framework was established and maintained (CEDA 1995; Bright 1996). VET staff have had to respond to micro-economic reforms which have significantly altered their working conditions and resulted in a fundamental reappraisal of their functions and role (Holland 1992, 1994; Peoples 1995). The sector is now working in an environment where a business and service orientation competes with the more 'traditional' education focus (OTFE 1998). Whilst there has been relatively strong support for reforms that show benefits for learners, other aspects such as the open training market have had limited support (Lundberg 1996).

Theme 2: The emergence of non-standard employment

The ways in which many Australians are employed have changed significantly in the past ten years. The education industry, of which VET is a component, is subject to these changes. Of particular significance has been the increase in part-time and casual employment, increased outsourcing of labour functions by enterprises, the growth in the number of self-employed people and the decline in the numbers of people employed in the public sector.

Whilst there are no specific data collected from VET providers on the numbers of staff employed (NCVER 1998, 317), recent data on employment in the education industry in general reveal some relevant information - that just over 590,000 people are employed in the education industry, nearly two thirds of all employees are women, and the industry is characterised by a fairly high level of part-time employment with approximately one third of all positions being part-time (NCVER 1998, 315).

An ABS Labour Force Study (Catalogue #6230.0) showed that there were approximately 31,400 TAFE teachers and "a further 57,500 extra systemic teachers and instructors" (NCVER 1998, 317). Many in the latter group would be teachers and trainers in private training providers and persons employed as trainers in a wide variety of enterprises. The NCVER study notes that this estimate of TAFE teachers is probably not an accurate one since it would not include those instructors employed on a casual or part-time basis and whose primary place of employment is elsewhere (NCVER 1998, 317).

Within the Australian workforce generally, and in VET specifically, these data suggest that the concept of permanent, full-time employment is no longer the usual form of employment for many workers. Curtain (1996) notes that there is a growth in "non-standard" employment which he defines as

> ... working arrangements that are a departure away from the 'traditional' concept of full-time, on-going work with the same employer. It can refer to work that is casual or part-time and includes temporary, fixed term and irregular work and workers who are self-employed.

Trends towards non-standard forms of employment do not appear to be merely aberrations that can be attributed to specific economic and social conditions unique to the past few years. Predictions show that over the next decade there will be substantial growth in part-time employment, only limited growth in 'standard' forms of employment and relatively strong growth in jobs which involve over 45 hours per week (Centre for Policy Studies 1998, Access Economics 1998).

A small-scale qualitative study undertaken in 1997 (Mathers) examined the trends in employment for VET staff. Key issues arising from this study that are relevant to our current research include:

- TAFE institutes generally are increasingly becoming reliant on casual and contract staff; according to the 1996 Australian Committee on Vocational Education and Training Statistics, only 58% of teaching hours were provided by full-time staff
- TAFE institutes provide a wide scope of education and training services when compared with other private providers (Fooks *et al.* 1997). It is therefore reasonable to suppose that TAFE would require a greater complement of full-time teaching staff to resource this wider range of educational services (p. 66)
- TAFE teachers are increasingly becoming involved in the delivery of VET-related courses in schools, which has implications for initial teaching qualifications of these teachers
- Several state systems have experimented with 'assistant' teaching positions for providing a limited range of teaching tasks at considerably reduced cost. These positions are usually part-time, offer a lower salary and require different levels of qualifications
- Private providers have also shown a preference for casual and contract employment as a key mechanism to facilitate quick responses to market conditions (p. 69)
- There is increasing evidence of a separation between the management and delivery of training (p. 72).

Research undertaken for the Office of Training and Further Education in Victoria (1998) provides a valuable snapshot of how current employment trends have impacted on TAFE staff development. In Victoria TAFE allocated 0.7% of gross salaries and wages to staff development in 1996. Different groups had access to differing amounts of this staff development. Management, comprising only 6% of the total staff, received one quarter of the staff development expenditure while teachers received the least amount. Teachers were more likely to make a private investment in training than any other employment category. Differences in private investment in training for teachers in various categories (part-time, casual and on-going) were not substantial, but fewer casually employed teachers undertook private training for their role. Staff development was usually delivered using traditional modes of delivery (eg: workshops), though there was evidence suggesting that new delivery models encompassing action learning and flexible delivery were beginning to emerge. Finally, responsibility for undertaking staff development rested largely with the individual employee.

Whilst this study is not able to be generalised across the TAFE sector in Victoria or beyond due to the sample size and return rates (OTFE 1998, 38), it nonetheless provides some indicative trends relating to potential linkages between employment modes and participation in staff development.

Theme 3: Shifting models of staff development

Prior to the reforms of the 1980s, VET and TAFE were virtually synonymous. Each TAFE system had a central staff development unit that offered a variety of courses. For many years, TAFE providers also offered internal basic teaching skills programs for permanent, contract and casual staff, such as the New Entry Lecturers' Methodology and Induction Course (NELMIC) and various other "train-the-trainer" programs. More recently, the Teaching and Learning package has been used extensively as part of the induction process for new staff and a means of up-skilling existing staff.

Universities have also played a significant role in VET professional development, providing practitioners with initial teacher training. In some states, attainment of various levels within teaching qualifications was clearly linked to progress through teacher salary barriers. More recently, this relationship has changed, with TAFE in some states severing such formal links and no longer offering paid leave for study or assistance in meeting fees.

A further development in staff development occurred with the advent of national workplace trainer and assessor competency standards. These have de facto become the minimum entry requirement for many teachers and trainers. There is now a wide range of training providers offering courses to meet these standards and increasingly universities are taking, or have been asked to take account of these courses in articulation arrangements.

In response to VET training reform, a number of staff development activities were developed at both state and federal levels. Examples of these programs included Implementing CBT, CBT in Action, AVTS Professional Development, National Transition Program, various National Staff Development Committee initiatives and more recently Framing the Future and Learnscope.

In contrast with earlier staff development initiatives that were derived from a skills deficit notion and used "train the trainer" models of delivery, more recent programs have used action learning, work-based learning and flexible delivery as core components. In a recent analysis of staff development programs undertaken in the 1990s, Perkins (1997) concluded that multiple programs had been offered that were not often linked in any way and involved duplication of effort (p. 6). Staff development is frequently viewed as a peripheral activity which takes teachers and trainers away from 'core' tasks, and there is often little or no support from managers/supervisors for staff development, which can limit its impact (p. 7). Moreover, there are competing views on whether staff development is a responsibility of an organisation or an individual.

Perkins also notes evaluations that show the potential for action learning approaches to have greater impact on organisational change and participant development (Kelleher and Murray 1996). Research has shown that staff development that was planned and integrated within a planning process aimed at achieving VET objectives was more effective in achieving long-term change. Frequently in cases of successful organisational change, 'people development' was not considered a separate activity. These cases often embraced a reconceptualisation of the nature of staff development such as that recommended by Hill and Sims (1997), who contend that professional development needs to be about more than skills and knowledge. It needs to embrace the development of teachers at the professional, personal and general levels, thus providing educative experiences which are not restricted to specific current or future roles and cater for the reality that the nature of work is in a state of considerable change. Staff development thus becomes an entity that serves two functions: contributing to the broader human resource requirements of the organisation and meeting the individual development needs of staff.

Recent research into the strategic use of staff development within a variety of VET organisations highlights various approaches to staff development that have emerged in response to the changing environment. A recent study (Harris & Simons 1997) examined a number of case studies in which staff development had been successfully integrated into a change management process. What emerged from this analysis were a number of key dimensions along which staff development activities could vary, giving rise to at least four different types of staff development: just-as-planned, just-in-case, just-in-time and just-for-me. These have been reported elsewhere (Harris & Simons 1998).

Issues arising from these key themes

These three key themes raise a number of issues for those charged with the provision of VET staff development. A summary of these issues is presented here, as they impact on the 'bottom line' - namely, improved quality of learning experiences for participants.

- There is growing research evidence (Austen 1995; Wooden 1996; Curtain 1996) that part-time and casual employees are less likely to participate in training than other employees. In addition, employers with a greater proportion of part-time or casual workers invest less in training activities than other employers (ABS, cited in ANTA 1998). There is no empirical evidence to date that suggests that the VET sector might be operating any differently.

- There is a growing trend for responsibility for staff development to be devolved from central training units to the local area of work. This has in effect entailed a shift in responsibility for staff development from employer to employee. It has also given rise to a range of development models focused on the workplace (eg: action learning, work-based learning).

- Teachers and trainers appear to have struggled to keep abreast of reforms that have had a significant impact on their work. The literature suggests there is a range of development needs of teachers and trainers which have not been met including, for example, those associated with working within a competency-based system, the interpretation of standards, issues relating to assessment (Choy *et al.* 1996; Cornford 1995, 1996; Roux-Salembien *et al.* 1996; Smith *et al.* 1997) and the open training market (Kell *et al.* 1998).

- The literature suggests that strategies are needed to assist teachers and trainers to deal with the change to their role in an increasingly diverse and competitive market (Simons & Harris 1997). Effective staff development is a 'three-fold' activity - that teachers and trainers are well equipped in their technical areas of expertise, they have a solid foundation in facilitating learning in a wide range of settings and they have opportunities to develop personally and professionally (Askins & Galloy 1992, Holliday 1995). The third element is vitally important in an environment where many VET staff are 'change weary' and the prospect of further change can easily be viewed less than positively. Staff development needs to address the process of change as well as the key elements within the system which are the focus of new initiatives.

- Industrial relations agreements can affect approaches to the provision of VET staff development. Many teachers and trainers are, however, employed under non-teaching awards and agreements. More importantly, recent research from ACIRRT (1998) suggests that awards and contracts may in future play a lesser role in determining the skill and knowledge requirements for teachers and trainers. Rather, it will be mechanisms such as Training Packages that will provide significant impetus to staff development directions and priorities.

- Workplace trainer and assessor competency standards have had a dramatic effect on the provision of staff development. A number of programs have been undertaken to ensure that all staff either complete courses in workplace training or undertake a recognition of prior learning process to confirm their competence. In many areas these standards have become the minimum qualification for teachers and trainers, thus supplanting, to a considerable extent, previous requirements for undertaking university studies. Yet the relevance of these standards for VET teachers has been questioned and this has led, for example, to the development of new competency standards for TAFE in Victoria (RCVET/VETASSESS 1998). Moreover, a recent review of these competency standards (Gillis, Griffin, Falk & Catts 1998) revealed that these standards are largely being ignored in the development and delivery of training for workplace trainers and assessors, and that there are serious doubts about levels of awareness and use of the standards in the assessment of competency for the training of workplace trainers and assessors.

- There is growing evidence to suggest that the functions of delivery and management of VET are increasingly being separated. For those in predominantly management roles, the workplace standards and recent relevant industry experience assume lesser importance. People filling management roles need a wider range of skills and knowledge aimed more at the systems level and dealing with issues such as design and maintenance of training systems, managing innovation and change, and supervision and appraisal of staff. In many respects, there may be a converging of the previously separate fields of human resource development and education.

- The increasing use of casual staff presupposes that employers will be looking for teachers and trainers who already hold relevant qualifications and experience. This has been relatively unproblematic so far, particularly with relatively high numbers of teachers from the public sector moving into the labour market. This supply, however, is limited. While it may be expected that employers will continue to provide staff development in those areas perceived to give their enterprises a competitive edge, it is unlikely they will invest in training of a more generic nature. Generic training subjects employers to the risk of staff being 'poached', thus reducing return on investment.
- Initial qualifications are only one aspect of ensuring staff are able to provide quality learning experiences. The maintenance of technical expertise to ensure relevance to industry is also a significant aspect. In the past, mechanisms such as the Return to Industry Scheme have played a valuable role. The adequacy of such approaches, especially given the increasing divide between management and delivery of VET, is an issue of debate. Additionally, for part-time staff who juggle more than one job in addition to family responsibilities, the question of participating in staff development could pose significant problems which are well beyond the issue of who will pay for those activities.

Conclusion

A review of the literature emphasises the increasing uncoupling of structured entry level training for VET staff with participation in full-time employment. In the recent past, initial training consisted of a mix of industry specific skills and knowledge, training in a university and on-job experience, usually at a TAFE college.

While industry specific expertise is still very highly valued, the pedagogical skills required by VET teachers and trainers have been questioned. What constitutes teachers' and trainers' work and how it is valued has undergone dramatic reconceptualisation as a result of massive changes to VET provision. Alternative pathways to develop teachers' and trainers' skills have proliferated. The impact of these diverse approaches to the initial development of VET staff are yet to be exactly determined. The issue of the most appropriate forms of staff development to meet both work-related and personal development needs of staff has become problematic. Finding solutions to how best to prepare oneself and maintain a high level of expertise (and so to maintain a secure foothold in employment) are increasingly been left to individuals with minimal support from employers.

The work of VET teachers and trainers is also increasingly been melded with other roles, such as human resource development and entrepreneurial work of marketing courses nationally and internationally. These changes influence employers' perceptions of the development needed by their staff.

The next phase of our research involves a national survey and intensive case study research. We believe the data captured in these activities will enable us to bring together insights from multiple perspectives to inform current approaches to staff development and to provide strategic directions for the future.

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MEANING-MAKING IN QUALITATIVE RESEARCH: ISSUES OF RIGOUR IN A TEAM-BASED APPROACH

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ABSTRACT

This paper explores processes of meaning-making and modes of knowing in a largely qualitative, industry-based study of competency-based training, conducted by research teams throughout Australia. Implications of differing epistemological perspectives of researchers are examined and suggestions for enhancing the rigour of team-based qualitative research studies are made.

Introduction

Qualitative studies are relative newcomers to the fields of adult and vocational education and training research. Quantitative methods, located within a positivist, or postpositivist, paradigm (Guba & Lincoln 1998, 210), have been considered more rigorous, scientific and objective than qualitative studies, thus providing the only important source of valid, reliable and generalisable knowledge. However, it is increasingly recognised that many significant research questions, for example, those that do justice to the complexities of educational contexts, can only be addressed adequately through qualitative methods (McIntyre 1995). The analysis of a social practice such as education is seen to require hermeneutic, interpretive and ethnographic approaches, in addition to those studies that attempt to map the field through measurement (Garman 1996, 14; Usher et al. 1997, 181). How to assess and enhance the rigour of such studies, while providing a more appropriate epistemological framework in which to conduct them, has preoccupied scholars for a number of years (Lincoln & Guba 1985; Gorman 1996; Denzin & Lincoln 1998).

This paper describes the methodology and some of the research practices of a largely qualitative, industry-based, national project, funded by the National Centre for Vocational Education Research (NCVER), and conducted in 1998 to evaluate the contribution of competency-based training (CBT) to outcomes in vocational education and training (VET). Seven research teams throughout Australia, including one in Victoria, were managed from the Victorian base by the two authors of this paper. Ways in which parts of the study were conducted to enhance rigour under such circumstances are outlined. However, the apparently divergent epistemological perspectives of some interviewers employed within the research teams led, at times, to different interpretations of the kind of information the study was designed to elicit. While influencing only comparatively small amounts of data, such differences, nevertheless, reduced opportunities for analysis. Since collaborative structures appear to be highly favoured in VET research, attention to such issues within the VET community appears warranted.

In this paper, we briefly discuss the research paradigms usually associated with qualitative and quantitative approaches to research and compare criteria for rigour seen as relevant within each paradigm. The nature of the research teams and the study design and its purposes and assumptions are then described, together with ways by which rigour was sought within the study. Apparent differences in epistemological perspective exhibited by two different interviewers are then discussed and, by way of illustration, sections of two records of interview are contrasted. Lastly, different approaches to meaning-making or modes of knowing are explored and suggestions for conducting more rigorous team-based, qualitative research are made.

Research approaches and paradigms

For the purposes of this paper, and at the risk of gross over-simplification, two basic paradigm positions are contrasted: a positivist and/or a postpositivist position and a critical and/or a constructivist position (Guba & Lincoln 1998, 195-220), the latter being adopted by the authors who designed and managed the project. The former position assumes an 'objective, external reality' that can be 'discovered' by research, even if only imperfectly and probabilistically, and is often associated with the deployment of quantitative approaches - nevertheless sometimes enriched by the collection of qualitative data. The purpose of research within this paradigm is usually to establish and measure cause-effect linkages between variables, thus producing law-like generalisations said to hold true across the field. The latter position, on the other hand, assumes socially produced or socially (and experientially) constructed realities, and relies, for the most part, on qualitative methods. Here, the purpose of research is either to critique and transform the social world or to develop 'more informed and sophisticated reconstructions' (ibid, 210). Thus social processes are emphasised and phenomena are interpreted 'in terms of the meanings people bring to them' (Denzin & Lincoln 1998, 3).

Rigour in constructivist research studies

Lincoln and Guba (1985) describe four criteria for rigour (or trustworthiness) in qualitative studies within a critical or constructivist paradigm, not to be universally prescriptive or exclusive, but to provide useful provisional guidelines for the qualitative researcher. These parallel criteria for rigour in positivist/postpositivist studies and are labelled 'credibility' (compared with internal validity), 'transferability' (compared with external validity), 'confirmability' (compared with objectivity) and 'dependability' (compared with reliability).

In relation to credibility, constructivists believe that 'there is no ultimate benchmark to which one can turn for justification' (Lincoln & Guba 1985, 295), that is, no one reality that the researcher must represent truthfully. However, the analysis and report need to 'ring true', or exhibit verisimilitude (Garman 1996, 19). Similarly, in relation to transferability, constructivist research explores situated patterns within particular cases, rather than producing externally valid generalisations. Transferability to other contexts is then assessable by those who read the reported cases, given sufficiently detailed description and interpretation in the research accounts presented.

In relation to confirmability, it is assumed that the value-free, objective enquirer is a myth, but that researchers should be reflexive and open about their positioning, foregrounding personal and cultural values and the theoretical and epistemological stances from which the research is undertaken (Usher & Edwards 1994, 147-153). The research report should also present a construction grounded in the 'tangible realities' of the case, such as what was said, written or observed. Lastly, in relation to dependability, it is recognised that replicability of findings, no matter what values and purposes are adopted by the researchers, is impossible. However, it is expected that, if researchers engage in a particular study, among the same community of research participants at a similar time, then 'data sets' obtained by these researchers, and thus emergent understandings, will be largely comparable. It is this last criterion for rigour, and the difficulties in meeting it to the degree the authors wanted, that are described in this paper.

Research strategies to enhance rigour and trustworthiness in studies include the following methods pertinent to this evaluation. Obtaining data from different sources and by different methods allows cross-checking, or triangulation (Lincoln & Guba 1985, 305), not to converge on a singular 'truth' but to provide sufficient evidence with which to build credible, dependable constructions. Maximum variation sampling (ibid, 233), to obtain redundancy of information, also ensures inclusion of many possible perspectives. Careful documentation of data ensures referential adequacy and confirmability (ibid, 313), while member-checks with research participants and other stakeholders (ibid, 314) assess verisimilitude. Reflexive journalling explores problematic issues in data selection and analysis (ibid, 327) and 'thick description' in the research account enhances transferability (ibid, 329). This study was designed with the above criteria and strategies in mind, together with a concern for ethical issues, including fairness to all 'voices' (Lather 1991).

The research design

The study was designed in two main stages. The first stage comprised investigative telephone interviews with approximately 200 training managers (or associated personnel) in companies throughout Australia. This was the largely 'technical stage' of the project. The second stage required detailed in-company case studies to be undertaken, one in each State and Territory, and each involving extensive observation of CBT in context and in-depth interviews with a number of different stakeholders of the training. This was the largely 'critical and socio-cultural stage' of the project, where cultures of training could be thoroughly explored.

This design required that seven research teams be established, each consisting of at least one qualitative researcher (whose values and research approach corresponded to those of the project managers and authors), and usually one or two research assistants recruited by the researcher. The research assistants were to take primary responsibility for the telephone interviews, while the researchers were to undertake and write the case-studies. It was the telephone interviews that were problematic in relation to the interpretation of the research task and therefore only the first stage of the study is discussed in this paper.

In this first stage of the project, to provide maximum variation sampling, those interviewed were drawn from large, medium and small companies in both urban and regional Australia, in the four industry sectors of Manufacturing, Services, Construction and Agriculture, Forestry and Fishing. In general, we wanted to ascertain the type of CBT programs being undertaken in each company, and the reasons for adopting either national or enterprise standards. How CBT was being deployed, how effective it was perceived to be, for whom and why, and its purported disadvantages and benefits for the industry, enterprise, trainers and trainees were also to be investigated.

An interview protocol was therefore devised. It contained several questions (1-9) requiring fairly factual answers. These concerned the nature of the workforce employed in the enterprise, the nature of the training being delivered, who was being trained, where, according to what standards, for what purpose, and any particular issues arising for the enterprise or individuals. Were there any differences (and, if so, why did they develop) in the use of CBT for casual or permanent staff, for example, or in the understandings of competency in largely feminised or masculinised workplaces? Other questions (shown as 10-12 in the data presented), sought to explore the advantages, disadvantages and overall effectiveness of CBT. These latter questions, perhaps especially, required an assessment of the problematic, as well as the useful aspects of CBT, inviting detailed opinions to be expressed and justifications given.

Indeed, the purpose of these interviews was to obtain a rich, enterprise perspective on CBT, from a diverse group of training managers. It was not to undertake a quantitative survey to measure and generalise about the effectiveness of different aspects of CBT for different types of enterprise. Rather, similarities and differences among the opinions expressed were to be explored and any patterns, and counter patterns (Lather 1991, 67), sought firstly across all enterprises, and subsequently within sub-groups of enterprises, according to 'objective' differences. Numbers of interviewees (approximately 30 in most States or Territories) were sufficiently large to provide triangulation of sources within each sub-category of enterprise.

Working with research teams

Researchers were requested to instruct assistants in arranging a suitable interview time for each training manager, offering to mail or provide a faxed copy of the interview protocol and project description (including confidentiality provisions) in advance. Interviewers were asked to elicit a 'lived sense' of the company, even if limiting the interviews to fairly focussed questioning. Twenty minutes was established as an appropriate interview length, given the straightforward nature of most of the questions. It was thought this would allow sufficient time to explore particular issues in depth. Answers were to be recorded in writing during the interview, with verbatim statements being indicated clearly. The final interview report was then to be written.

A vast body of writing (concerning theoretical and epistemological assumptions, as well as practical issues) was sent to each research team. However, at no time was the whole group brought together to discuss the research purposes, and many difficulties were experienced initially in accessing training managers. In addition, as project managers, we perhaps over-emphasised procedural instructions at the expense of underlying frameworks and purposes, which are harder to communicate simply, particularly in writing. Interviewing well within a critical or constructivist paradigm involves understanding both the interviewee's experience and the purposes of the research, as well as technical skills (Seidman 1998), and interview protocols are always open to interpretation. Indeed, in asking for advantages, disadvantages and overall effectiveness of CBT as perceived within each company (questions 10-12 respectively) - rather than asking what positive (or negative) changes had taken place as a result of CBT - the interview protocol itself may have invited a generalised rather than a descriptive response.

Differences among interview reports

We had expected reports of interview of different length. Some interviewees are particularly forthcoming; others are more reticent with their opinions. However, it appeared that certain research assistants were consistently producing much longer reports than others. For example, the average length of the records of interview conducted by one interviewer (as measured by the number of lines of answers produced when entered into the computer program 'Ethnograph') was 210 whereas, for another interviewer, it was 54.5. For the former interviewer, the record of interview lengths varied between 141 and 283 lines, while for the latter interviewer, the variation was between 43 and 84 lines. (For other interviewers involved in the study, the mean lengths of interview records were 138, 80.5, 80, 78, 65 and 64 lines).

Such quantitative data is open to many interpretations. Perhaps some research assistants allowed a limited time only for each interview and were determined to maintain their schedule as arranged. A more plausible reading, however, is that variations arose for two main reasons. Firstly, there was insufficient recognition by at least one research assistant that an exploration of opinions was needed and/or secondly, details were seen as less important than summaries within the interview report presented.

For example, the record of interview for one large company training manager, responding to questions 10-12 (dealing with advantages, disadvantages and effectiveness of CBT, respectively), reads as follows:

> Q:10 Continuous monitoring of progress. Provides good benchmarking. Trainees know exactly what they have to do.
>
> Q:11 Time in administration and assessment. Need for a dedicated staff person to coordinate. Lack of experiential factor in programs.
>
> Q:12 Generally very effective.

While the above report makes mention of some key themes throughout the data, how to interpret each comment is somewhat unclear. What, for example, is the 'experiential factor' to which the interviewee/interviewer refers? It might relate to the importance of practice in the development of embodied skills, or the significance of experiential knowledge in enabling further learning to occur. Alternatively, it might refer to the lack of opportunity to engage in 'hands-on' work or authentic experience during the CBT program. All these issues were mentioned elsewhere in the data provided by other interviewers.

In addition, one might imagine the answer to question 12 as a response to a Likert scale, in which the respondent is asked to tick a box among those ranging from 'not effective' to 'very effective'. Indeed, many of the answers reported for this interview give only tantalising hints about how CBT is 'lived' within the company. One way of using such data might involve counting the number of occasions on which phrases like 'time for administration' or 'time for assessment', for example, appear. These numbers might then be expressed as a percentage of the total number of companies and generalisations about these issues across the board could be made. Yet just what is implied within these simple phrases remains ambiguous. Possible meanings include loss of work time in taking assessors off the job in order to train them as assessors or to engage in the assessment process, and time taken in assessing recognition for prior learning (RPL) and/or in documenting competencies achieved. However, such phrases do incorporate 'abstract' categories that might well form the basis of two quantitative survey questions.

On the other hand, the record of interview for a second large company training manager, interviewed by another research assistant, reads as follows:

Q:10 CBT is advantageous as "each skill is documented, trained on and assessed, that's the whole key to it". The interviewee feels that "the old system" involved learning by rote, which was not always transferable to work. CBT is a "hands-on do program". In designing CBT training this organisation "hasn't gone down the path of reams of manuals ...[they use] the best manual of all - the machine itself". There are lots of diagrams and pictures in the training materials that are used and this company hopes to put a lot of this onto CD-ROM with a future goal of moving to on-line training.

Q:11 "You can make robots of people" with CBT training and the interviewee is "looking to put brain food in there" so that people can manage their work more effectively. Brain food might include teamwork, conflict resolution skills and so on. Another issue is retention of competencies. "Once a person is deemed competent, it's not, I've passed and that's it". Staff need to be constantly reviewed to ensure that their skill levels remain adequate. CBT assessment was compared to receiving a driver's license. "Once you're given a license, you continue to get better or worse, so you need to be monitored".

Q:12 Overall the company "had no problems with it [CBT], but a little more fine tuning" would be advisable. CBT was considered "good and effective". This company is moving towards a philosophy of Human Resource Development, that is, "the overall training and development is tied into the strategic development of the company". CBT "is not the be all and end all, but it's a good operation".

Here the interviewer paints a detailed picture of CBT in practice. Indeed, elsewhere in this interview, short vignettes are provided to illustrate the issues raised. This is a 'storying' approach, in which detailed aspects of workplace culture are elicited. Opinions are often recorded verbatim, with particular attention being given to the interviewee's metaphors, such as 'brain food' and a 'driver's license'. A quite complex view of competence emerges from this interview: one incorporating the 'soft' skills of communication and team-work, together with the capacity to develop further, that is, using competence as a 'driver's license' with which to proceed. The report displays a narrative form, rich in the interpretations of the interviewee, but also indicating the predilections of the interviewer (and the project managers), to explore, for example, the concept of competency.

Approaches to meaning-making and modes of knowing

Garman (1996, 13) contrasts definitional and discursive knowing, the former relating to precise and abstract definitions providing the 'perimeters of concepts', the latter to the development of meanings as found in discourse over time. Sacks (1985, 85-90) notes that 'the mental processes that constitute our being and life are not merely abstract and mechanical but personal as well. These processes involve not just classifying and categorising but also constant judging and feeling'. He expresses concern that 'by a process of verbal reductionism, the abstract has been separated from the phenomena themselves'.

Similarly, Belenky *et al.* (1986, 100-130) contrast separate and connected ways of knowing. In the former, meaning-making is impersonal and 'feelings and beliefs are rigorously excluded' (ibid, 109). A dispassionate stance is taken to events, observing problems from a pragmatic, strategic or technical point of view. 'Disinterested reason' (ibid, 110) is what is important. Connected knowing, on the other hand, involves learning through empathy and taking an interest in the other's point of view. In constructed knowing, however, these two positions are integrated into an understanding that 'All knowledge is constructed, and the knower is an intimate part of the known' (ibid, 137).

Incorporating such contrasts, Bruner (1986, 11) describes two modes of knowing and thinking or ways of 'ordering experience and constructing reality', the paradigmatic and the narrative. He writes (1984, 7): 'The narrative smells of daily life: value-laden, particularistic, its meaning riddled with cultural negotiations. The paradigmatic is of the domain of science and technology, formal, highly abstract, aspiring to be context-free and independent of intention'. Though complementary and necessary if enquiry is 'to capture the rich diversity of thought', each has its own operating principles and 'criteria for well-formedness' (Bruner 1986, 11). In similar vein, Verran (1995, 103) contrasts 'representationalist' and 'performative or enacting' modes of knowing. The former assumes knowledge to be universal, accurately representing a 'discoverable' reality, whereas the latter assumes knowledge to be 'specifically embodied', or 'located', and embedded within practical contexts.

In positivist or postpositivist research, a paradigmatic or representationalist mode of knowing appears to predominate, while in critical or constructivist research, it is likely that a narrative or performative mode prevails. However, in positivist or postpositivist projects, abstract categories that form the basis of survey questions may well be extracted from rich narrative data (Garman 1996, 12-13). On the other hand, in critical or constructivist projects, in ordering and making meaning from qualitative data, theoretical and abstract categories are frequently employed. The form and substance of the research story is also 'created' by the chosen 'facts' of the case, that is, by tangible, observable and even measurable realities, and by the implicit or explicit theoretical framing of events.

In this study, signs of both paradigmatic/representationalist and narrative/performative modes of knowing were recognized in the interview records of all research assistants. In relation to the former, general categories were used as short-hand, a way of summarising many of the complexities involved in interviewees' answers. In relation to the latter, reporting was discursive, using a narrative form and making a deliberate effort to connect with interviewees' experiences. Research assistants seemed to move constantly between these modes of knowing, thus managing the tension between them, but in somewhat different ways. Yet, one research assistant, in particular, appeared to privilege paradigmatic or representationalist knowing to an excessive degree for the purposes of this research - thus compromising the dependability of the data from this region. Interview records, submitted by this interviewer, provided limited opportunities only for developing an understanding of reported categories. Thus many of the experiences and opinions of certain training managers were lost to the research story.

As Harris (1996, 318) points out, 'the choice of research method is influenced by the assumptions the researcher holds about the social world and its inhabitants, as well as the nature of the study required'. Similarly, it appears that whichever mode of knowing is privileged and whichever masked will also depend upon the epistemological assumptions of the researcher.

Conclusion

If different investigators across qualitative research teams operate according to different research paradigms, and thus privilege different modes of knowing, aspects of rigour and trustworthiness are likely to suffer. How then can project managers of qualitative studies attempt to manage the tensions between different viewpoints so that a trustworthy product emerges? More explicit attention to communicating about and developing understanding of these issues within and across research teams appears essential.

For example, in the absence of face-to-face contact across research teams, a sample record of interview might be sent to each research team as a 'model' for reflection and discussion. This could engage people in 'anticipatory learning' (Candy & Matthews 1998, 13), or rehearsal, about how they might respond to certain interviewees' answers and to what purpose. The 'model' would also show the degree to which the inclusion of narrative detail is desirable in records of interview, as appropriate to a particular study. It would 'perform' the knowledge required for interviewing in a way that procedural instructions could not. Without imposing a rigid template, such a 'model' could also be a starting point for reflexivity - about one's epistemological position and values - and the purposes of the research. This understanding could then inform those judgements that are constantly exercised during interviewing and reporting. Thus trustworthiness and rigour are likely to be enhanced and the processes of meaning-making extended and deepened.

With hindsight and time to be more reflexive on our work as project managers, it appears that we, too, privileged a paradigmatic or representationalist mode of knowing, in many of the materials that were provided for the research teams in this study. The greater use of narrative and performative methods of communicating across research teams would thus seem to be desirable in qualitative studies. Moreover, as qualitative, team-based research becomes more widespread in VET, the issue of rigour and trustworthiness, associated with diversity in the values and perspectives of different researchers, would appear to merit further investigation.

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STUDENT READINESS TO LEARN VIA THE INTERNET

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ABSTRACT

Adult education is in a period of transformation. This transformation can be traced to the use of technology in learning which is forcing educators to review 'what they do .....and how they do it.' According to Sherritt and Basom (1997) the use of the Internet in the delivery of learning is the main catalyst of this transformation. Although the implications of the use of the Internet in adult education are not fully understood, it is apparent that the Internet heralds profound changes in ways of knowing and learning. By ignoring and not discussing issues surrounding the Internet's use in adult education, educators may risk being excluded from an educational metamorphosis that redefines adult learning for the beginning of the new millennium. This 'rethinking' of learning in the context of the Internet raises many issues. Some of these issues include lifelong learning, responding to learner demand, access, applying the technology to learning, initiating innovation, developing policies and procedures, and investigating collaborative approaches between public and private institutions. (Paine, 1997) This paper will focus on a discussion of these issues and provide the results of the OPEN Training and Education Network (OTEN) Student Technology Survey. The purpose of this survey was to investigate the attitude of OTEN students to on-line learning and to determine the expected demand for this type of learning and delivery.

Lifelong learning

Recent economic, social and technological change has redefined the nature of employment forever. Brown and Scase (1997) regard secure employment as a thing of the past. Industrial and organisational restructuring has resulted in the availability and continuity of work being increasingly uncertain. For workers to survive in this environment they need to be more flexible and adaptable. Brown and Scase (1997, p. 86) state that workers "require a broader portfolio of technical, social and personal skills than the more job-specific skills which were emphasised in the past." Workers need to continuously update and upgrade their skills and training to keep pace with the changes in the workplace and in society.

According to Kumar (1997, p.27) "in a fast-changing society, skills become obsolete before they are fully absorbed." Workers need to be learning all the time. This learning can be on-the-job or with a public or private educational institution. Many employers value credentials received from recognised educational institutions. However, the idea that credentials maintain currency for a lifetime of work is an outmoded belief. The challenge faced by adult education providers is to offer learning that is relevant to industry, up-to-date and of a high standard. Workers are aware that to compete successfully in the employment market the learning they undertake needs to be recognised and valued by employers. This learning may be formal, for example, gaining a credential or it may be informal, for example, learning from a mentor in the workplace. There is no doubt that the work environment is in a state of constant change. The only certainty in this environment is that for many adults learning must be ongoing. It must become a lifelong activity.

This shift to lifelong learning should not solely reside with adults taking responsibility for their continued learning. It also is the responsibility of educators to formulate and implement policy that encourages and educates adults, and especially children to value lifelong learning. If educators are serious about developing a culture of learning then the best place to start fostering this attitude is in the early years of schooling.

Responding to learner demand

This trend in continued learning has been facilitated by the introduction of technologies such as the Internet. Due to the increasing pressure of family and work commitments most workers have less time to devote to traditional modes of learning such as attending a campus for day or evening classes. Workers require a wider choice of learning options and more flexible means of accessing them. They also want more individualised and customised learning. This is where technologies such as the Internet are positioned to deliver education and learning in a wide range of environments and locations such as at home and in the workplace.

Access

Although the Internet has many advantages for adults who want to pursue lifelong learning, it only advantages those adults who have access to the technology and who have the skills to use it. Elsden (1997) states that the use of the Internet has been dominated by the privileged, that is, those with better jobs, more money and education. However, this is changing, as technology becomes more prevalent in society. This perception of who has access to technologies, such as the Internet needs to be questioned and investigated.

Dorman (19##) states that the high cost of computer equipment may have deterred adults from accessing and using the Internet. However, in recent years equipment costs have significantly declined. A computer is an affordable piece of equipment that is found in approximately 42% of Australian households, which are nearly 3 million households. (ABS Report February 1998). In May 1998 14% of Australian households had access to Internet at home (ABS Report May 1998). This is further evidence to support the changing picture and pattern of computer and Internet use in our society.

In the late 1970s and 1980s many adults were fearful of using computer technology. However, with the proliferation of computers and technologies in the workplace and in society this fear has subsided. Many adults have access to technology at home and work and may be ready to be offered the chance of using this technology for learning.

Learning for adults with low levels of literacy has always been a problem. The Internet uses written text and images to display information. The high level of use of images could advantage adults with poor literacy. Educators could effectively utilise this combination of media to assist learning for adults with literacy problems.

Applying the technology to learning

The traditional way of formulating knowledge is enshrined in the teaching methods of our age. In Higher Education Institutions, particularly universities most teaching methods still adhere to the face-to-face lecture model. The prevalence of this method across most disciplines has legitimised and justified its use. The shared use of this teaching method by many adult educators has reinforced its authority and legitimacy as an appropriate way to gain knowledge in the world. Research by Alexander, McKenzie and Gleissinger (Albert, 1998) shows that many learners still associate real learning with having lectures. Although face-to-face lectures are still widely used in adult education, their use and privileged position is being questioned and challenged.

On close examination of what is happening in adult education the use of technologies such as Internet is becoming more prevalent. The potential of the Internet in adult learning is only just being realised and discovered. However, Alexander, McKenzie and Gleissinger (Albert, 1998) state that many educators have not thought through learning issues associated with using the Internet. Many educators have concentrated on merely producing web pages that are mainly graphics based with little or no textual content, or web sites that are dense with text and resemble on-line lectures.

Bates (1997) states that quality Internet learning needs to be properly instructionally designed. It needs to be packaged in an attractive easily accessible way, and include student and technical support. Alexander, McKenzie and Gleissinger (Albert, 1998) stress the importance of providing staff development in the use of the technology and technical support. Their message is that quality educational learning packages do not have to be state-of-the-art award winning productions. Learning can be delivered via the Internet in a cost effective, efficient way that does not compromise educational standards. Although McKenzie and Gleissinger's (Albert, 1998) research supports the view that face-to-face learning is superior to learning via the Internet, Internet facilitated learning is still in its infancy. They do provide many examples of the successful use of the Internet in learning.

Initiating innovation

Educators are accustomed to changes in learning content. However, the methods and equipment used for delivery have remained fairly constant over the years. The advent of computer technology has changed all that. (Ehrmann, 1996) Computer technology is constantly evolving and changing at a rapid rate. This does not automatically lead to improvements in learning methods and content. Educators face the difficulty of trying to successfully mesh content, learning and technology. There are many factors to consider in the combining these areas, especially for on-line learning. The technology should be reliable, affordable, easy to use and accessible. The learning should make allowance for varying learning styles, allow for learner interaction and cater for learners with special needs. The content should provide the learner with problem solving opportunities and scenarios. It should also fully utilise resources that already exist, for example, links to relevant sites on the Internet. For on-line learning Starr (1997) recommends using a template approach to the authoring of courses. A template in this context refers to different learning models. There needs to be a variety or diversity of learning models to provide consistency for teachers as well as learners.

Educators should clearly indicate to learners the level of hardware and software required to participate in the learning offered via the Internet. Starr (1997) emphasises that educators should ensure that their organisation has the internal technological capability to service learning via the Internet. Educators also need to ensure that administration procedures associated with on-line learning are functional and streamlined.

Educators need to provide adults participating in on-line learning with introductory courses to become familiar with the use of the on-line learning environment. This type of learning is different from the structured face-to-face learning, which is prescribed and directed by teachers in classrooms. Learners may need assistance in adjusting to the choice and freedom that on-line learning provides.

Staff also needs to be adequately trained and prepared for the introduction of new technology. It is important in training staff to ensure that they are able to use the new technology as well as easily change learning content. Staff should be made equally aware of an innovation's good and bad points. Staff needs to be able to deal with technology difficulties.

Enthusiastic staff members or staff with computing expertise initiated much of the early development of on-line learning. As these staff burnout or leave organisations other staff have to be encouraged to participate in on-line learning. These staff may require incentives and support to initiate computer-managed technological innovations. Paine (1997) advocates this as a positive way of changing, shaping and influencing teaching methods and practice.

Policies and Procedures

The success of the introduction of any innovation relies on strategic planning, policy formulation and the development of efficient and effective administrative systems. Strategic planning and policy development requires collaboration between educators, instructional designers and technology experts in an organisation. Gatliff and Wendel (1998) point out that success of policy and planning is dependent on all stakeholders in an organisation deciding upon outcomes, being able to communicate their views and concerns and sharing a common vision. Gatliff and Wendel (1998, p.31) also believe that stakeholders need to agree on such things as "what is to be taught, who is to teach, who is prepared to teach with existing technologies, which technologies should be used and how students can be best accommodated." Policies and planning needs to address the practical implications and procedures for learners and staff across an organisation. The process needs to be managed so that all stakeholders can have confidence in its success. Bates (1997) states that effective policies need to be put in place for on-line learners, particularly for those learners who have gone to the expense of purchasing computer equipment for the purpose of study. It is important to acknowledge that investment in on-line learning is not necessarily a cost saving exercise. Gatliff and Wendel (1998) state that on-line learning requires an adequate investment of resources for initial development and ongoing commitment. Depending on the components or model of on-line learning adopted it may be no more costly when compared with traditional methods of learning.

Sobski (1997) maintains that any planning for the use of the Internet must include provision for investment in staff in the form of training. This training should be in the use of the technologies and their use and application in an educational context. Staff need time and training to become comfortable and familiar with the technology. Changing and influencing professional educational practice does not happen overnight.

Those Educational Institutions that plan and deliver learning on the Internet in an ad hoc manner may end up with a mixed bag of learning products that vary greatly in educational quality. This variation in quality and product may harm even down grade the image of an Educational Institution as a provider of quality education and training. Educational Institutions need to convince adult learners of their proficiency in delivering learning on the Internet. This is vital to retaining and attracting adult learners. The use of the Internet has the potential to expand opportunities for non-traditional learners to participate in higher education. Educational Institutions run the risk of losing many potential learners by not having a presence on the Internet. The Internet should be seen as a significant medium and opportunity for generating new business.

Kumar (1997, p.34) points out that Higher Education Institutions "now have to compete with an increasing range of specialised organisations that, based on the new information technologies and with a more precise brief, can offer equally good or better services to government and business." This theme of competition between the private and public sphere is also emphasised by Coffield and Williamson (1997, p.5). They warn that educators, particularly those in the public sphere need to take control of the educational direction they wish to pursue in regard to learning on the Internet, "as otherwise their future will be defined for them by political or business elites."

Collaborative approaches between public and private institutions.

Paine (1997) talks about the formation of new partnerships between private and public organisations. He states that in Britain funding for new initiatives is obtained from the private sector. This finding is used for joint public/private projects. He advocates this a successful approach to bring in money into the public sector.

The idea of forming partnerships, sharing services, equipment and costs may provide savings or reductions in costs to educational providers and learners. Joint agreements between public and private organisations may be a common occurrence in future. These agreements may be on a project by project basis or based on the delivery of components of learning such as providing the technology equipment and know-how or the educational know-how.

THE OTEN STUDENT TECHNOLOGY SURVEY

RESULTS & CONCLUSIONS

The aim of this research was to investigate the attitude of OTEN students to computer-based learning and delivery and to determine the expected demand for this type of learning and delivery.

The research involved a postal survey in the form of a self-administered questionnaire.

The sample was stratified according to Faculty area. 2,000 students who enrolled with OTEN in Semester 1, 1998 who were working were randomly selected from the four Faculty areas.

Of the 2,000 students sent questionnaires, 730 replies were received. This is a response rate of 37%. Neuman (1997) states that " a response rate of 10% to 50% is common for a mail survey." Most researchers consider anything below a 50% response rate as poor and unrepresentative of a population. However, it can be argued that the profile of the respondents in the survey closely matched those of the OTEN student population for sex, age, and geographical area. The three Faculty areas of Production, Services and Business Studies were representative of the OTEN population. However, the Access Faculty was slightly under represented.

According to the findings 79% of the respondents had an income of $40 000 or less. This supports the view that access to computers is not restricted to the privileged, that is, those with better jobs, more money and education. The profile of the average computer user is changing and includes medium to lower income earners.

Sixty percent (60%) of respondents are aware that they can access computers in TAFE NSW colleges; however, few use them. Many students, particularly country student may not access these computers as they are too far from the college. The number of computers available in each college may vary. This may restrict use.

A large proportion of students (73%) has access to computers at home. Although higher than the Australian figures of 42% of households with computer access, it must be remembered that the OTEN students are studying and are committed to learning. 38% of OTEN students have access to the Internet at home. This is a higher percentage when compared with the 14% for Australian households. 40% of OTEN students indicated that they had an Internet address. 33% of students stated that they would pay for an Internet connection for study purposes.

One hundred and ninety nine written comments were received from respondents. From the comments received many OTEN students are ready to access computer-based learning, particularly via the Internet. Many students indicated that to support on-line learning that they would like an introductory subject about the Internet included in on-line courses. The trend for access to computers and the Internet at home, at work, and in society to increase will continue.

Almost 60% of OTEN students have a Pentium PC. Of those without a Pentium, students were divided over whether or not they would upgrade their computer hardware for study purposes. The majority of students had access to the common software packages of Word, Access and Excel. 34% of students stated that they would be willing to upgrade software for study, 45% stated that it would depend on cost. This shows that students are willing to think about upgrading computer hardware for study purposes.

58% of OTEN students stated that they would use the Internet to gather information. This is the most widely known way to use the Internet, that is, to access information. Many students stated that they would use it to interact with a teacher, that is, to access teacher support via email. Many other students would like to access their course notes on-line and submit assignments via email. The main uses of the Internet at present are to send and receive email and access information via web pages and sites. Therefore, it is not unusual that the OTEN students have cited uses that have been popularised over the last few years. With the introduction of learning via the Internet student choices for use of the Internet may change over time depending on their exposure to on-line learning. It is positive that students do want to use the Internet for learning.

When asked how they would like OTEN to deliver computer-managed courses most OTEN students indicated that they would like a copy of the materials on computer disk. Many students would like contact with their teachers via email and many would like interactive materials made available via CD ROM. Again this shows that students want to experience media other than print in the delivery for their courses. These results indicate that students are ready to experiment with computer technology for learning.

The survey results indicate that OTEN students are open to the concept of learning via the Internet. According to many of the written comments many students are ready to experience and experiment with this type of learning. These students have a reasonable level of computer technology in their home or at work and many have Internet access and an email address. There are some students who are concerned about the cost involved. However, overall the comments received from students were that this type of learning was a good idea. They want to find out more about this type of learning and are asking what OTEN has to offer.

Summary

Traditional methods of teaching and learning still hold a central place in the development and progress of knowledge; and understandably there is some resistance to let go of the certainty and uniformity that these methods claim to give. However, it is inevitable that new methods of learning such as using the Internet will continue to be improved and refined. The Internet is a sophisticated tool that educators can use to facilitate learning. Although the implications of the Internet to adult education are not fully understood, its existence cannot be ignored. Educational Institutions need to embrace this computer technology in the knowledge that it provides a new way of knowing and learning. The challenge for educators is to utilise it in the best possible way to enhance learning.

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LEARNING IN SMALL BUSINESS

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ABSTRACT

Small business is under represented in formal education and training activities. There is some work which suggests that small business relies on informal, contextualised learning methods, such as learning from suppliers or other businesses. Small businesses may hire staff who are already skilled for the job. It has also been suggested that many jobs in small businesses are low skilled, and so it is not surprising that small business has a lower participation rate in education and training.

This paper presents some findings from a study, funded by NREC, which surveyed 181 small businesses in three urban and three rural centres throughout Australia. The findings suggest a relationship between contextualised on-the-job training and success, and training and learning prompted by a desire to keep up to date and improve efficiency and success.

Introduction

The Australian Bureau of Statistics (1998) has estimated that there were around 850,000 small private sector businesses in Australia in 1997, with some 3.5 million employers and employees. Small businesses accounted for almost half of total employment in 1994-95 and the small business workforce is increasing at a faster rate than the big business workforce (Howard 1997). The Council of Small Business Organisations of Australia draws attention to "a correlation between small and labour intensity", small business generates jobs because they are labour intensive (Bastian 1998). Small business is under represented in formal education and training activities (Wooden and Baker 1995), with studies finding that less than a quarter have participated in training since commencing business (NCVER 1998). If education and training are significant contributors to skill maintenance and development and as small business represents a large and growing proportion of national employment, then small businesses' under representation in education and training has implications for the level of skills in the economy as a whole.

Other forms of learning can contribute to development of knowledge and skills. Several researchers have found that small businesses do not value structured training; they prefer hands on learning (learning by doing) and believe that is more effective (Catts et al 1996; Robertson and Stuart 1996; Coopers and Lybrand 1994). This finding applies both to education and training before starting in business and continuing learning.

There is a growing body of work which suggests that small business relies on a range of informal, contextualised learning methods, such as learning from suppliers or other businesses, as well as learning by doing (for example Field 1998; 1997; A Gibb 1997). Writing about the learning environment of small business managers, A Gibb (1997) says:

> The predominant contextual learning mode in this environment is that of: dealing with a wide (holistic) task structure; learning from peers; learning by doing; learning by feedback from customers and suppliers; learning by copying; learning by experiment; learning by problem solving and opportunity taking; and learning from making mistakes...
>
> The learning environment described above is continually creating 'subjective' contextual knowledge; this contrasts sharply with the 'objective', largely decontextualised (from the specific problems/priorities of the firm) learning environment frequently provided by the teacher or trainer. (A Gibb 1997, 19)

Workplace learning is contextualised. It can be structured or unstructured, as is learning by feedback from customers and suppliers and most of the examples given in the quote from Gibb. Field (1998) points out that best practice workplace training in the Australian context is taken to be structured training, yet unplanned (and unstructured) learning can be very significant for individuals and their enterprises. He found that limited reliance on structured training did not mean that learning was limited. The learning which occurred between enterprises, such as between suppliers and their customers, was particularly important for business that are dependent on a high level of knowledge and skills.

Many reports (Bureau of Industry and Economics 1991; Karpin 1995; Coopers & Lybrand 1994) suggest that there is a low level of management skills among small business owners, and this impacts negatively on their attitude to skills development for themselves and their employees. Other reasons for low rates of small business participation in structured training given in the literature include: a preference for independence; lack of confidence in working in training settings; a preference for information from known sources; a fear of being exposed to new knowledge and skills; hiring staff who are already skilled for the job; many jobs in small businesses are low skilled; and the cost of training, including time (NCVER 1998; Kilpatrick and Rosenblatt 1998; J Gibb 1997).

Skills development, and training in particular, is often prompted by requirements of external bodies (government, awards, financial institutions, suppliers or customers), new technology, a desire to expand, and a crisis (Coopers & Lybrand 1994). Most of these prompts to learn are reactive, with the exception of a desire to expand and new technology if the business is an early adopter rather than following common practice in their industry.

TERMINOLOGY

In this paper, the term course refers to activities organised by or in conjunction with an external body, and includes VET (vocational education and training) courses. Courses do not necessarily lead to an accredited qualification. Seminars and business meeting arranged with an aim of sharing or developing knowledge or skills, on-the-job training organised by the business, and learning from mentors or consultants engaged by the business are considered separately. These four activities (courses, on-the-job training, seminars and learning from mentors) are referred to as training. The term informal learning is used to cover learning from print and electronic media (not as part of an organised course), and incidental or ad hoc learning from customers, suppliers, and business and social networks. Education and training includes learning activities undertaken or accredited through an institution.

BUSINESS SUCCESS, TRAINING AND LEARNING

Earlier work with small businesses in agriculture confirms a preference for informal learning methods for the sorts of reasons discussed above, but finds that businesses which participate in organised training (accredited and non-accredited) are more successful in terms of profitability (Kilpatrick 1997; 1996).

Specific, or on-the-job, training is an important factor in increasing productivity. A study by the American Society for Training and Development found that over half the productivity increases which occurred in the United States between 1929 and 1989 were due to learning on the job, and that people given formal workplace training have a thirty percent higher productivity rate (Business Council for Effective Literacy, 1993). Learning organisation theory literature is based on the premise that learning in the workplace increases productivity (for example, Senge 1993).

There is some evidence of a relationship between prior education and success in small business. Kilpatrick (1996) found that small agricultural business owner/managers with formal qualifications were more profitable because they were better able to make appropriate and successful changes in their business. Bureau of Industry Economics (1991) and number of studies summarised in World Bank (1995) found that small businesses with better educated managers are more likely to grow and/or survive. A large Australian study over a twelve year period found a significant relationship between prior formal education and business success (Williams, in McMahon, 1989, 62).

The ability and willingness to make successful changes to practices in the business is suggested as the link between education and training and business success (measured by productivity, profitability and/or survival). Education and training is especially important for those functions which require adaptation to change (Sloan, 1994). Welch (1970), in a seminal work in human capital theory, found that education can affect productivity via improved quality of labour and also via an allocative effect which is due to improved ability to process information, select inputs and allocate inputs across competing uses. A number of studies suggest that the better educated are aware of a greater number of possible innovations through use of the mass media and contact with expert advisers (for example, Rogers, 1995). When combined with the enhanced ability to select the best of these innovations, this awareness will lead to superior outcomes for businesses with better educated managers and workforces.

A final body of literature which suggests that education improves responsiveness and adaptability is that which concludes that education alters values and attitudes. The interaction between participants which takes place during training time, and before and after sessions allows individuals to compare their values and attitudes with group norms. The opportunity to alter values and attitudes during training increases the probability of a change to practice (Guba & Lincoln, 1989).

Informal learning also has the potential to alter values and attitudes, either toward or away from change. Lave & Wenger (1991) suggest a model of learning as social construction. Learners learn to function in a community by learning the shared language and acquiring the community's subjective viewpoint. Brown and Duguid (1991) talk of shared meanings for interpreting complex activities being formed and transformed through problem solving in workplace communities.

Whilst work such as Field (1998) indicates the importance of informal learning to small businesses, there is no clear information about the relative importance of informal learning, on-the-job learning and structured education and training in business success. This paper attempts to shed some light on the issue by investigating whether successful business are more likely to be involved in various types of organised training, on-the-job training and informal learning, and examining the motivations, or prompts, for training and learning experiences.

This paper reports part of the findings of the NREC project 'The relationship between training and small business'. The findings here relate to the relationship between current and past participation in education and training in small business and success or failure, and how small businesses decide how to improve their knowledge and skills.

Methodology

A total of 181 small businesses in four industries in each of three metropolitan and three non-metropolitan regions were surveyed by telephone. The regions were chosen to include regions of varying rates of economic growth. Metropolitan centres are defined as those with a population of 100,000 or more.

The industries chosen represented those where most small businesses are located (Australian Bureau of Statistics 1997): construction, retail, property and business services, and manufacturing. Although more small businesses are located in agriculture than manufacturing, agriculture was not been selected because there is a large existing body of work on training and small agricultural businesses. Of the four nominated industries, one is a growing industry (property and business services), one is a declining industry (manufacturing) and two are industries which move with the economic cycle (construction and retail). Between 41 and 50 businesses from each of the four industries are in the final sample.

Small businesses were selected using random sampling from the Yellow Pages Internet Page. They were telephoned and asked about their number of employees. Only those will less than 20 employees were asked to participate. The sample is dominated by micro businesses, with one third having no employees (apart from the partner(s)), 30% only one or two employees and only 17% employing more than five people.

The survey asked closed questions about the age and size of the businesses, the qualifications of its owners and employees and whether the business was experiencing growth and changes in its environment. Open-ended questions asked about the nature and range of learning and training activities of owner/managers and their employees. The quantitative approach means that all instances of learning and training are assumed to be potentially equally valuable to the small business. For example, all the instances of on-the-job training are weighted equally, all courses are assumed to be the same quality, all seminars equally useful and all informal learning equally valuable.

Indicators of success were developed based on a review of the literature (Field 1997; Barrett 1998; Kelmar 1991). To be placed in the 'successful' category businesses had to have survived at least three years and either had increasing turnover, or maintained turnover at a steady level and met their non-financial goals, or maintained turnover at a steady level despite experiencing some event which had a negative impact on the business. In order to be sure that businesses in this last group had survived the negative event, those with steady turnover and a negative event, but unmet non-financial goals had to have survived more than five years to be deemed successful.

Responses were entered directly onto an Excel spreadsheet as the interviews were conducted, and data were analysed using Excel and Statview computer programs to generate cross tabulations, descriptive statistics and multi-variate analyses.

Results

PARTICIPATION IN TRAINING AND LEARNING ACTIVITIES

This section provides a summary only of the results relating to participation in order to place the results relating to success and training and learning in context. Detailed results will be presented in the final report of the project.

Almost one third of the sample had had an employee or partner (owner) attend a relevant course in the last 12 months. The largest group of courses attended were technical/production related vocational education and training courses. Over one third of the sample had undertaken some on-the-job training. Business with employees, especially those under 25, were more likely to have participated in relevant courses and undertaken some on-the-job training.

Attendance at business meetings and seminars was more common than either participation in courses or on-the-job training, with over 60% attending a seminar or meeting in the last 12 months. In contrast to courses and on-the-job training, more seminars and meetings involved learning about management and management-related issues than technical or production issues. More than 30% had used a consultant or mentor.

Informal learning sources were found to be useful by over 80% of the sample, with learning from within industry sources the most frequently cited. Suppliers were the most frequently cited source. Media, those working in the business, family and social contacts, and professionals such as accountants, were all used by around half or more of the small businesses surveyed.

PARTICIPATION IN PRIOR EDUCATION AND TRAINING AND SUCCESS

Around half the sample had partners and/or employees with VET qualifications as their highest qualification, and another fifth to a quarter had university qualifications. Those with partners and/or employees with university or VET qualifications are more likely to be in successful small businesses than those with only school qualifications (see Table 1).

Table 1: Indicators of success by highest qualifications of partners and employees

Highest employee &/or partner qualifications**	Successful	Other	Total % of sample
University	28	18	46
% of qualification category	61%	45%	25%
VET	51	37	88
% of qualification category	58%	43%	49%
School	13	28	41
% of qualification category	32%	64%	23%
Not stated	3	3	6
% of qualification category	50%	50%	3%
Total	95	86	181

** χ2 P value <0.05

LEARNING AT TIME PARTNER(S) STARTED BUSINESS

The most common way of learning about their new business for the partners was experience or trial and error. Over half worked in this business before taking it over, or had worked in a related business. One third did a course (either on small businesses or the technical/ production aspects of the business). Advisors or mentors were used as a learning source by nearly a quarter of those surveyed (see Table 2).

Contrary to the result expected from the earlier discussion of other research, successful business partners were no more likely to have attended a course at the time they started in the businesses than partners of other businesses. However, successful business partners were more likely to have learnt from print or electronic media (typically magazines and books) and report that they learnt from experience or trial and error after they started or took over the business (Table 2).

Table 2 Learning method at time started business and success

Learning method	Successful	Other	Total (% of sample)
Worked it out, experience, trial and error*	69	46	115
% of success category	73%	53%	64%
Worked in business or related enterprise, learnt from previous owner	58	49	107
% of success category	61%	57%	59%
Did a course at time started business	31	29	60
% of success category	48%	34%	33%
Consultant, mentor	24	20	44
% of success category	25%	23%	24%
Business or social network	18	16	34
% of success category	19%	19%	19%
Media*	24	6	30
% of success category	25%	7%	17%
Total	95	86	181

* χ2 P value < 0.05

More than one response allowed.

CURRENT PARTICIPATION IN TRAINING AND LEARNING ACTIVITIES

Table 3: Indicators of success by training and learning sources

Learning activity	Successful	Other	Total % of sample
Attended a course	35	22	57
% of success category	37%	26%	31%
On-the-job training**	41	25	66
% of success category	43%	29%	36%
Attended a seminar or business meeting	61	50	111
% of success category	64%	58%	61%
Used consultant or mentor	31	26	57
% of success category	33%	30%	31%
Media	18	11	29
% of success category	19%	13%	16%
Customers	11	14	25
% of success category	12%	16%	14%
People in the business	10	12	22
% of success category	11%	14%	12%
Others within the industry	23	79	85
% of success category	50%	92%	47%
External to industry, not social networks	29	20	49
% of success category	31%	23%	27%
Social networks	20	24	44
% of success category	21%	28%	24%
Any informal learning, excluding media	80	69	149
% of success category	84%	80%	82%
Total	95	86	181

** χ2 P value <.05

There are few relationships between business success and recent participation in education and training or use of informal learning sources. Those businesses that participated in on-the-job training were more likely to be successful than those that did not (see Table 3). Further dissection of the 'others within industry' category shows no statistically significant relationship between learning from suppliers or customers and success category. Thus the results do not support a link between inter-enterprise informal learning, which Field (1998) notes is important for some businesses, and business success. Field's sampled businesses had two or more full-time employees, and may be more likely to be in industries that need inter-enterprise learning than the industries and micro businesses in this sample.

HOW SMALL BUSINESSES DECIDE HOW TO IMPROVE THEIR KNOWLEDGE AND SKILLS

For each type of training and learning activity in which the business had participated, those interviewed were asked to recall what had prompted the business to train or learn, and why they had chosen the particular training or learning activity undertaken. Table 4 shows prompts for specific types of learning activities. The prompts for training and learning for successful and other businesses are shown in Table 5.

A general desire to improve the efficiency, and thence profitability, of the business was the most frequently given prompt for training or learning, followed by looking for new opportunities, the introduction of new technology or work practices and on-going staff or management training or learning. Those planning learning and training activities in the future gave similar prompts.

Small businesses used different learning and training sources for different needs. Attendance at seminars and meetings was most frequently prompted by looking for new opportunities. Mentors and consultants were used most often in learning to solve a specific problem. Almost half of those who had attended a course did so because they were required to do so by law, an award, customer or supplier (Table 4). The small number of businesses prompted to undertake learning activities for 'other' reasons gave reasons related to a desire to participate in the community, or maintaining goodwill with suppliers.

Table 4: Prompts for undertaking learning activities, by learning source

Prompt	Course	% citing prompt	On-the-job training	% citing prompt	Seminar	% citing prompt	Mentor/ consultant	% citing prompt	Times prompt cited
To improve efficiency	39**	68%	44**	67%	69**	62%	32	56%	184
Seek new opportunities	24	42%	25	38%	88	79%	15	26%	152
New technology/ work practices	18**	32%	35*	53%	76	68%	10*	18%	139
On-going staff training, inc. new staff / to keep up to date	33*	58%	42	64%	43	39%	11**	19%	129
To take advantage of an opportunity	9	16%	20**	30%	48	43%	20	35%	97
To solve a problem	8	14%	27**	41%	24	22%	38	67%	97
Recommended/advertised and looked useful	3	5%	4	6%	45	41%	13	23%	65
Required by law/award/ customer/ supplier	27	47%	7**	11%	24	22%	3	5%	61
A crisis in the business	2	4%	2	3%	3*	3%	8	14%	15
Other	3	5%	0	0%	6	5%	0	0%	9
Number participating	57		66		111		57		

* Proportion of successful businesses giving prompt is greater than other business $\chi2$ P value <0.1

** Proportion of successful businesses giving prompt is greater than other business $\chi2$ P value <0.05

More than one response could be given. Prompts for up to two activities of each type could be given.

Successful businesses were more likely than other businesses to be prompted to learn or train by a desire to improve efficiency, new technology or work practices. Successful businesses were more likely to use learning or training on an on-going basis or to learn or train as a means of keeping up to date. They were slightly more likely to learn or train to take advantage of an opportunity or to solve a problem (see Table 5). Businesses which were unsuccessful were more likely than those which were neither successful nor unsuccessful (which includes those too new to determine their success) to be prompted to train to take advantage of new opportunity, requirements of an external agent and recommendations or advertising (Table 5).

Table 5: Prompts for undertaking any type of training or learning activity

Prompt	Successful	Neither successful nor unsuccessful	Unsuccessful	All
On-going training, keeping up to date**	50	16	15	81
%	53%	35%	38%	45%
Take advantage of opportunities*	34	8	12	54
%	36%	17%	30%	30%
Seek new opportunities	43	16	19	78
%	45%	35%	48%	43%
Improve efficiency**	62	16	15	93
%	65%	35%	38%	51%
Solve a problem*	33	11	9	53
%	35%	24%	23%	29%
A crisis	2	5	5	12
%	2%	11%	13%	7%
Required by law, award, customer or supplier	9	7	21	37
%	9%	15%	53%	20%
Recommended or advertised	22	6	11	39
%	23%	13%	28%	22%
New technology or work practices**	45	13	14	72
%	47%	28%	35%	40%
Total	95	46	40	181

*Proportion of successful businesses giving prompt is greater than other business $\chi2$ P value < 0.1

** Proportion of successful businesses giving prompt is greater than other business $\chi2$ P value <0.05

A breakdown of type of learning or training activity chosen for various categories of prompt shows that successful businesses were more likely than other businesses to choose courses when prompted by: a desire to improve efficiency; new technology or work practices; and, for on-going training or as a means of keeping up-to-date. Successful businesses were more likely than others to choose on-the-job training to take advantage of an opportunity; improve efficiency; solve a problem; implement new technology or work practices and for training required by an external agent. Mentors or consultants were used as a learning source on an on-going basis by successful businesses more than other businesses.

The most frequent reason for choosing a training or learning source was that it provided learning that was relevant to the business, followed by it was perceived to be a good way to learn and convenience of the location or time of the activity. Almost one quarter chose a training or learning source because there was no alternative method of learning about the topic. There was no significant difference in the reasons for choice of activity given by successful businesses compared to other businesses.

When reasons for choice are considered for each of the learning and training types, there were some significant differences in the reasons given by successful and other businesses. Successful businesses were more likely to choose on-the-job training because it is relevant to the business, courses because of the convenience of timing or location and because they are seen to be a good way to learn about the topic, and a mentor or consultant because they provide learning which is relevant to the business.

Discussion and conclusions

The extent of course attendance by small businesses in this study appears to be slightly higher than the Australian Bureau of Statistics' Survey of Training and Expenditure quoted in Wooden & Baker (1995) and Field (1997), although the data are not directly comparable because the ABS survey responses from small businesses tend to concentrate on accredited training (Field 1997).

The findings support the existence of a link between prior education and training, measured by highest qualification levels of those working in the business, and the success of the small business, as found by Bureau of Industry Economics (1991), Kilpatrick (1996) and other studies cited in the introduction to this paper. However, the finding does not extend to taking a course at the time of going into a small business or subsequently attending relevant courses.

There is evidence that contextualised learning is related to success, supporting A Gibb (1997). Partner learning by trial and error and experience in the business at the time of starting the business was related to success, as was later contextualised training in the form of on-the-job training for employees or partners.

Informal learning, including from suppliers, customers and others within and outside of the industry was popular, with most businesses reporting informal learning and finding it useful, confirming findings of studies such as Field (1998), Catts et al (1996) and Coopers & Lybrand (1994). Informal learning was used to a similar extent by both successful and other businesses, although informal learning from media at the time of starting in the business was correlated with success.

Successful businesses were more likely to be prompted to learn or train, including to take courses, on-the-job training and use mentors, by a desire to improve efficiency, new technology or work practices and as a means of keeping up to date or for on-going training or learning purposes. This is consistent with learning being used to deal with change and with proactive rather than reactive prompts for learning (Coopers & Lybrand 1994).

This and other studies have found that successful businesses have better educated managers. A possible relationship between learning and training is as follows. As suggested by Welch (1970) and Rogers (1995), the better educated in small business are more aware of changes they could make to improve efficiency, partly because they use training and learning on an on-going basis to keep up to date. The changes they do make are more successful because they are aware that training and learn assist in the implementation of new technology and work practices.

The findings suggest that the benefits of contextualised learning, especially on-the-job training, should be promoted to small business. Awareness that successful businesses train and learn to improve efficiency and deal with change (implementing new technology and work practices) should be increased, as should awareness that successful businesses routinely use training and learning on an on-going basis. A change in attitude toward a learning culture in small business must be accompanied by easy access to relevant learning and training. This is a challenge for the Australian Training system, which is grappling with ways of involving the diverse small business sector in the formal training system.

Finally, some limitations of the study should be noted. The sample group was predominantly micro businesses in four industries (retail, construction, property and business services and manufacturing) and the results therefore are indicative only of this group of small businesses. This study focussed on the relationship between various methods of training and learning and small business success at a macro level. It did not examine the features of the various types of training and learning which make them more or less effective. Issues such as assessment and delivery were not considered. It did not investigate the benefits of training and learning to individual employees of the business, who may transfer skills learnt from one work context to another and to non-work contexts in the wider community.

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EVALUATING FLEXIBLE LEARNING MATERIALS

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ABSTRACT

Much effort is currently devoted to developing flexible learning materials. However, not nearly as much attention is given to evaluating them once they are delivered. Few evaluations gather objective research evidence about how and why particular materials work well. This paper will suggest a framework for evaluating flexible learning materials.

Evaluation

Evaluation studies vary along a continuum from experimental research (random assignment of subjects to experimental and control groups) to descriptive studies. Various classifications of evaluation models and approaches have been proposed, beginning in the early 70s (for example, Stake 1973, Worthen and Sanders 1973, Popham 1975, House 1978, Stufflebeam and Webster 1980). By 1987 more than 50 different models had been identified (Worthen and Sanders 1987).

Benson and Michael (1990) provide a broader classification for evaluation designs comprising four categories: experimental, quasi-experimental, survey and naturalistic. Campbell and Stanley (1966) provide detailed evaluation designs for the experimental and quasi-experimental categories. Quasi-experimental designs arose as experimental designs were not flexible enough to encompass all aspects of a particular program in the field. Survey designs are often used for programs implemented at many sites, involving a large number of participants. Quasi-experimental and naturalistic designs may be combined to evaluate both the implementation and the impact of programs (Benson and Michael 1990, 545-546). More recently, Smith (1996) classifies models and approaches to evaluation into seven categories, some of which overlap with the designs above.

A prime aim of evaluation is to present decision makers with information for their objective management of educational programs (Stufflebeam and others 1971). However, once the evaluation has been finalised and reported on, it is eminently possible that managerial practices will not be affected (McAnany and others 1990). This makes the 'selling' of the evaluation process and products to those managers making the decisions vital. The inclusion of management early in the evaluation is crucial.

Smith (1996) describes evaluation models as 'methodological advocacies' (238) in that they tend not to describe procedures in detail, are subject to varying interpretations and many decisions are left to the evaluator's professional judgement. By implication, evaluators usually have freedom to tailor their evaluation to the needs of the program. Thus Levine (1996, 266) recommends that meaningful evaluation

> can and should use an eclectic approach ... grounded within a defined conceptual framework ... An eclectic approach requires the integration of various methodologies ... to be implemented in different educational settings ... to gather significant and relevant data ... for different purposes ... using different instruments ... from different users.

Flexible learning

Flexible learning is facilitated when learners are provided with programs (subjects or courses) delivered flexibly. Flexible delivery has been defined by the Australian National Training Authority (ANTA 1996, 1) as

> a way of providing what the learner wants, making sure that what they want is clearly specified in terms of *what* (content), *how* (mode), *when* (timing and sequencing), and *where* (location).

Learners may potentially use the flexibility provided by the deliverer to

> (use) a range of learning strategies in a variety of learning environments ... (which cater) for differences in learning styles, learning interests and needs, and variations in learning opportunities (Flexible Delivery Working Party 1992, 5).

To facilitate this flexibility, support materials of various types are produced. Flexible learning materials will vary according to the delivery method chosen and the learner. For instance, primary school distance learners require different materials to tertiary students using the internet. For examples of flexible delivery in TAFE NSW, see Planning and Evaluation Unit (1995, 4-48).

Flexible learning materials may include various combinations of multiple media - print, audio, video or broadcast television, computer software or other resources. Alternatively, the whole program may be delivered using some or all of the previous resources, integrated through a computer, referred to as multimedia.

Evaluation of flexible learning materials

There are a number of aspects of flexible learning materials to note when conducting evaluations. It is anticipated that flexible learning materials will increasingly use multimedia. The integration of various media into a logical and user-friendly multimedia learning material is complex and challenging. Some multimedia projects can be time and resource intensive, requiring hundreds of thousands of dollars (Hoekema 1992) or taking several years (Jones 1990). Similar considerations can apply to video projects. These time and cost considerations impact on the evaluation methodology.

The content of flexible learning materials needs to be current, as does the software and hardware used. In some areas, content changes frequently, and development teams need to consider this in the design of their materials. Students and institutions continually upgrade their equipment in line with software and hardware developments. Development teams need to ensure that their software remains current as long as possible.

Flexible delivery using stand alone materials may mean that learners have less opportunity to interact with teachers or tutors. Flexible learning materials need to provide greater learner support. Distance materials and programs delivered with minimal teacher interaction are the most complex and challenging to develop. The distinction between distance and face-to-face materials is blurring, as distance materials are now used more frequently in classrooms. However, materials developed specifically for classroom use are generally not suitable for distance learners due to their lack of complete content coverage and inbuilt support.

Flexible learning materials need to include all possible groups of learners, both those with learning difficulties and those with various types of disability, as such learners may be more likely to study flexibly. MacCann (1997) and MacCann and Downie (1998, in press) suggest guidelines for designing learning materials which allow for learners with visual disabilities to access internet sites using text readers, and for learners with all types of disability to use any of the wide variety of media currently available. The needs of all learners should be considered both in evaluating existing learning materials, and in designing new materials.

Strategies for learners to acquire metacognitive skills should also be included in flexible learning materials. These skills assist learners in analysing and improving their own learning. Tessmer (1996, 190) includes this as an element of front-end evaluation, but they should also be considered when selecting existing materials and developing new ones. See Schmeck (1988) for information on how to teach metacognitive strategies. For a discussion of flexible learning and metacognition, see Boote (1998).

A suggested evaluation framework

Three possible evaluation frameworks were located. Wolf (1990) includes all learner groups across a range of learning environments. He separates information into five classes: initial status of learners, learner performance after a period of instruction, execution of treatment, costs and supplemental information. A framework for the evaluation of telecommunications-based distance education is presented by Dillon and Gunawardena (1995). Their framework classifies distance education into types of interaction; timing of interaction, and social presence. In the multimedia area, Pham also provides an evaluation framework (1998, 109). Wolf's framework is very broad, while Pham and Dillon and Gunawardena deal with particular types of materials.

In this paper, a framework is proposed which follows the chronological stages of materials development, summarised in Table 1. This framework suggests evaluation stages and their outcome, with possible evaluation tools and techniques, at various stages in the process of materials development and implementation. It could apply to a wide variety of projects in developing flexible learning materials. The evaluation approach or design selected varies, depending on the purpose of the evaluation and its intended outcomes.

FRONT END OR FEASIBILITY EVALUATION

The term 'front-end analysis' was used by Harless (1973) to describe activities which contributed to decisions about program installation. Front-end or feasibility evaluation is suggested by Tessmer (1996, 187) as the first step in the development process. Feasibility evaluation occurs in the planning stage and is particularly appropriate for any projects which require a large expenditure of both time and money. Before starting the project, developers make decisions about content, costs, media, resources, timelines and both student and teacher training.

The first step is to map out the general content. Once this has been completed, a search for existing materials can be carried out. Existing materials research is an essential step in the process prior to the decision to go ahead with developing materials. These materials can assist the developer by providing either part or all of the content. It is a waste of time and money to re-invent the wheel - to develop, yet again, materials that are already available. A team of experts in flexible learning and curriculum analyses the materials and matches them to the content. For example, at the Open University in the UK, the opinions of course team members, external assessors and developmental testers were obtained (Hawkridge 1995, 85). At the Open Training and Education Network (OTEN), content experts and instructional designers are used.

Checklists for evaluating materials as they are developed can also be used for evaluating existing materials (OTEN, 1994; Parer 1995, 171). Rating scales should also be considered. Where available, students can be included as evaluators to provide a learner's perspective. There is a useful discussion of techniques and issues in Eraut (1990, 210-212). When considering evaluation issues, techniques and tools, Anderson and Ball (1978) is an excellent and practical source of information with many useful tables and matrices.

The decision whether to use an internal or external evaluator would be made at this point. If an external evaluator is selected, they should participate in the project from an early stage, so they can assist the team in deciding what information to collect, at what points, and how to collect it. Evaluators could consider using the *Standards for Evaluations of Educational Programs, Projects and Materials* (Joint Committee on Standards for Educational Evaluation, JCSEE, 1981) to plan their evaluations. This includes a form for evaluators to check which of the standards they have used in their evaluation (JCSEE 1981, 148).

Once existing materials have been researched, the next step in the feasibility evaluation is to select the remaining elements of the program and refine content detail. The developer outlines the intended learning experiences, learners' expectations of the media, and instructors' intended use of the media. Bates (1991) analyses some of the issues involved in the selection of media and its use. Concept testing can be carried out to ensure that there is a need for this material, in this form, and that an appropriate market exists (Pham 1998, 109).

Although multimedia is currently becoming more fashionable, some projects can be styled as solutions in search of a problem. Clients interested in multimedia development may want to be on the cutting edge, rather than selecting the design for its fit to the content and learners (Tessmer 1996, 187). An interesting example of the analysis of learning needs leading to a change in the media chosen is described (190).

Finally, developers should consider whether there is management support for projected costs, timelines, staff and user training. Tessmer suggests techniques and tools which can be used for this stage (1996, 191-196). Once these issues have been satisfactorily analysed and documented, the flexible materials development project begins and the formative evaluation stage commences.

FORMATIVE EVALUATION

Formative evaluation provides information for developers to improve the flexible learning material. De Wolf (1996, 380) distinguishes between first and final draft stages, while Eraut (1990) advocates small-scale field testing at prototype stage then large scale field testing in the final stages of development (213). This is very much an issue with multimedia projects, where a mock up may initially be used to structure the program, while at final draft stage, it is very close to a finished product. The development process at the German Distance University includes testing at first draft stage and field testing at the final draft evaluation stage (Laaser 1993, 292).

If possible, the drafts should be discussed with the potential learner group at both these stages, initially to validate a particular approach then, in final draft ,to iron out any problems that may have crept in. In this final stage, the development team may have difficulty anticipating learner problems. They have spent time and effort on the materials, and may be so familiar with them that they see what they expect, rather than what is actually present.

Multimedia projects have their own special features. For example, learners should be able to navigate around the materials easily, choosing their own unique path. Learners should never be caught in a loop, making it difficult to exit. Formative evaluation is crucial for sorting out problems before they become far more expensive and difficult to change.

The Delphi technique (Uhl 1990) could be used where the materials development team are distant from each other. An action research methodology could be considered for a small-scale, local evaluation study (Carr and Kemmis 1988).

SUMMATIVE EVALUATION

By this stage, the flexible learning materials are now with the learners. Information gathered from this point on can still be fed back into a revision cycle, but it also can be used in a summative way, to present information to those who approved the funding and to those who make decisions about funding similar projects. For costly materials development projects, a large-scale study using external evaluators is sometimes used.

A clear evaluation plan is immensely valuable at this stage, as it specifies what information is to be collected, how, from whom, for what purpose, and how the information will be used. The plan would have been written during feasibility evaluation. Internal evaluators frequently collect information in the wrong format for analysis, from a restricted audience, without really knowing what the information will be used for. It is at this point that careful planning pays off.

Techniques such as cost-benefit analyses (Ross 1995) would be useful here. Analyses of the intentions of designers, mapped against the student outcomes, are also useful to see whether designers' assumptions are borne out by the learners' use of the materials. Measures of student performance indicators such as student dropout, average pass rates and levels of student achievement on assignments and in examinations (Hawkridge 1995, 85) are frequently gathered. However difficulties with using these measures occur as there are too many other confounding variables, apart from the learning materials, that influence these factors (Woodley and Parlett 1983).

For materials using group pacing strategies, evaluation should assess how pacing strategies are monitored to assure that the rate of progress through the program is appropriate (Dillon and Gunawardena 1995, 348). Where social interaction is important, it should be investigated in an evaluation (350). For individualised materials, the quality of the interaction between learner and content, as well as the feedback and motivational support provided, should be evaluated (Parer 1995). Since a frequent claim for the superiority of flexible learning materials is the learners' ability to study at their own pace, the above considerations are very important.

A range of techniques has been suggested for evaluating multimedia learning materials, some of which are also suitable for other materials. Webster (1995, 482) mentions computer modelling to explore the relationship between specified variables, which are identified by multiple regression. He also mentions navigation patterns through the material by learners, times spent at various nodes of information, patterns of user interaction, use of help facilities and tools (483).

Observational studies can involve video, logs, path tracking, interview and think aloud techniques. In think aloud techniques, learners verbalise their thinking at the times when decisions need to be made. When materials are computer based, video can be recorded in three views: keyboard and mouse; trunk, head and shoulders of the learner and computer screen. To make analysis easier, these can be recorded on a split screen with a time signal superimposed.

Computer-based log files can record what commands are used, screen and time data, along with path history. These can be recorded on computer as the learner is using the materials. Path algebras, directed graphs and social interaction methods are also mentioned (Webster 1995, 483) as tools for multimedia evaluation. In addition, further data can be collected in follow up interviews of students. Webster (1995) mentions verbal reporting, interviews, path tracking combined with constant-comparative analysis, data reduction and discrepant case analysis.

There are a number of disadvantages for these techniques being used together in a 'combinational' way in a naturalistic design (Webster 1995). It is not clear how all the information can be combined to provide an overall picture of the learning environment. Analysis of the wealth of data is difficult: the cost is prohibitive, the storage capacity required is enormous, and the cost versus the benefit is questionable (Webster 1995, 483). It is also difficult to triangulate the data - to verify different themes or elements in the study from a number of differing data sources - as the data is in differing forms. Webster suggests that a new interface may need to be designed for the evaluator handling multifaceted data.

Ultimately, a summative evaluation study will be judged by its adequacy for the purpose it was designed for. A clear statement of its purpose and methodological basis should be given in the documentation both in the planning stage and the final report.

Obtaining multiple judgements

The judgements of content experts are often used throughout the process of developing flexible learning materials. However their judgements are sometimes inconsistent with the learners' opinions about the quality of instructional software - students are often more critical than teachers. In addition, experts may not correctly predict learners' performance after using the materials. Software rated highly using subjective evaluation techniques proved not to be highly effective when used by learners (Reiser and Kegelmann 1996).

Furthermore, the reliability of ratings of materials can vary considerably across different expert groups, (Reiser and Kegelmann 1996, 259). Content specialists tend to rate computer software differently to computer specialists, who look more at the technical than the content area. This may also happen in the video area, where technical specialists may rate the technical aspects more highly than content specialists.

To counteract these difficulties, evaluations should obtain multiple ratings from different groups: professional educators, external experts and students. Where discrepancies occur, these areas should be further investigated with each of the groups. Where materials deal with different ethnic groups, or are to be used by students of particular ethnic groups, a representative of those groups could be included in a panel of content experts.

Concluding comments

Flexible learning materials are developed for a wide range of learner groups, across a variety of educational settings. An evaluation framework needs to encompass the wide variety of models, designs, tools and techniques which are appropriate for different projects, at different stages of development. For small-scale projects, evaluation design could include an action research methodology with an emphasis on formative evaluation to improve the learning materials.

For major projects, it is essential to have a carefully planned, costed and approved evaluation study before the project actually starts. Funding bodies could allocate additional funding, where considered necessary, for an outside evaluator to be involved in the project throughout. There is much to be gained in a major study from an external evaluator who is more able to see the materials from an external perspective.

Many learning materials developers never see the learners using their materials, as development is often carried out at a distance from the intended learners, and information is rarely provided to development teams about how their products are being used by learners. Assumptions may be made by development teams about how learners use materials, without any evidence having been collected to verify these assumptions. This information is essential in large-scale, costly projects to allow future products to benefit from hindsight.

The importance of the final report, and reporting results of the evaluation to all parties concerned, is stressed in Passow (1990). While a great deal of time and effort may have gone into the evaluation, there is no necessary relationship to the decisions made following the study, unless the results of the evaluation have been communicated in a timely and relevant way to those making the decisions.

Evaluations should themselves be evaluated to build up meta-evaluation information (Straw and Cook 1990) and improve the quality of this field of research. There have been repeated calls for increased empirical study of evaluation practice (Worthen 1990, Scriven 1991) to compare the effectiveness of different methods and models in informing practice.

Table 1: A suggested framework for evaluating flexible learning materials

Evaluation stage	Outcome	Evaluation tools/techniques
Front-end or feasibility evaluation	Determine content; evaluate existing materials; determine available resources, suitable media, staff, timelines, management support; develop project and evaluation plan.	Expert opinion and student evaluation; focus group; interview; questionnaire; training needs survey; concept testing (examine needs and markets); rating scale or checklist.
Formative evaluation:		
First draft development	Improve first draft and development process.	Expert opinion; checklists; rating scales; possibly Delphi; field testing with intended learners; naturalistic studies, action research.
Final draft development	Improve final draft and development process.	Field trialling: observation, questionnaire, interview, social interaction methods.
Summative evaluation	Outcomes may vary, depending on size of project and funding for evaluation; provide decision makers with information about the success of the program.	Observation; questionnaire; interview; social interaction methods; case studies. For multimedia: audit trail; navigational patterns; time spent at various information nodes; patterns of user interaction, use of help facilities and tools, path algebra's and directed graphs. For smaller projects: action research may be appropriate. For larger projects a number of designs are available.

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THE PLACE OF VOCATIONAL EDUCATION AND TRAINING STRATEGY WITHIN THE OVERALL PLANNING FRAMEWORK OF GOVERNMENT: IMPLICATIONS FOR RESEARCH

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ABSTRACT

Decision making by government for vocational education and training is contrasted with that for other areas. The paper argues that the national strategy is unique in Australia, in that it is comprehensive, interventionist and the product of the federal and state/territory governments acting corporately. Some possible research implications are proposed.

Introduction

For over a decade, vocational education and training have been priority areas of governments in Australia, at both state and national levels. Their importance has been as a consequence of governments' need to address the dual problems of increasing unemployment, particularly among young people, and Australia's declining economic position relative both to other OECD countries, and to countries in the region. Given the instrumental nature of vocational education and training, research into them cannot afford to limit itself to being predominantly self referential, if it is to serve its purposes maximally of providing expert, informed, visionary and impartial critique. Rather, it must also examine itself in the broader context of planning for the labour market and the economy as a whole.

To do so would require an extensive program of research. This paper is an initial look at possible issues. We focus on decision making of governments because that is where ultimate authority lies; we are not overlooking the role of the bureaucracy, boards and the like. Some of our historical observations and explanations are based on personal experience, rather than search of records or the collection of opinions. We offer them as insights and tentative conclusions.

We first recap on how vocational education and training are assumed to affect unemployment and the economy, and confirm that they can be viewed as promoting both economic and sociocultural order. A model of government decision making for policy and planning is proposed that recognises the promotion of each economic and sociocultural order as key variables on the one hand, and an interventionist/non-interventionist dichotomy on the other. We consider the current national strategy for vocational education and training in the context of this model. We suggest that decision making for vocational education and training is unique in terms of its commitment of national and state/territory governments, together with its comprehensiveness and its level of intervention. We see this as reflecting a unique level of unanimity amongst governments about vocational education and training, as well as a history of less formal collaboration nationally within the sector. A brief look is taken at decision making for related areas of the economy. We suggest that the strategy has some of the characteristics of government decision making in these other areas, where there is a move to a less interventionist approach with a greater reliance on market forces. Possible research implications are suggested.

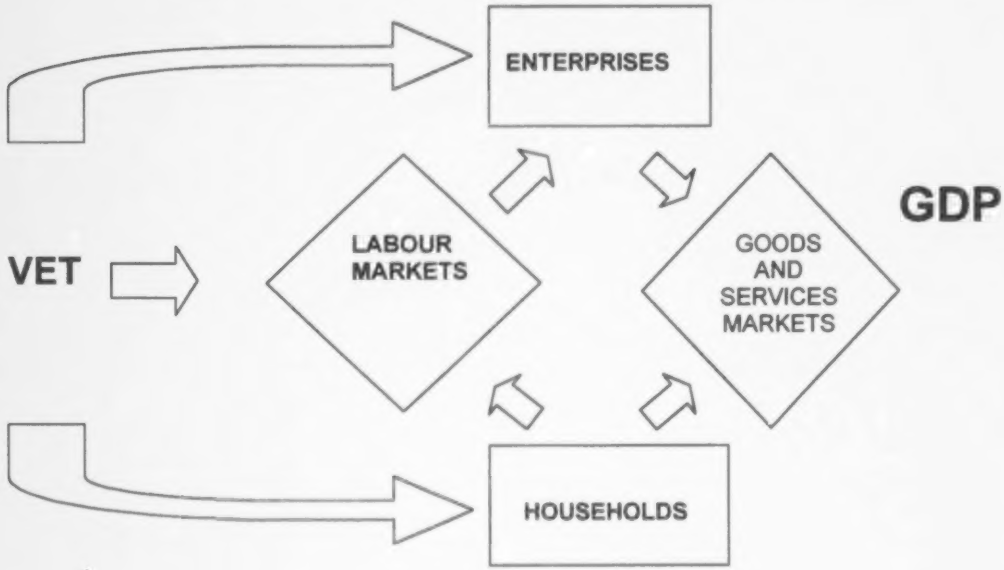
The justification for vocational education and training

Figure 1 depicts the role of vocational education and training (VET) in the economy. Its contribution is made in three ways:

- at the pre employment stage by preparing people for entry into the labour force,
- as a means of better matching between the capabilities of those offering to sell their labour, and the demands of enterprises as purchasers in the labour market,
- and by providing for the continuing development of capabilities of employees to meet the changing human capital requirements of the organisations that employ them.

As a consequence, VET can be expected to have a beneficial effect on the economy by promoting growth through its direct and indirect impact on the productivity of workers, promoting more efficient labour markets by enhancing labour mobility, and reducing unemployment, by providing job-seekers with skills and knowledge of value in the workplace.

Figure 1: The relationship between vocational education and training and the economy



There are social effects too. Work is a primary source of self esteem, and is the principal source of social contact for many people. Loss of work not only means loss of what is usually the major source of material wellbeing, but also boredom, damage to relationships within the family and concept of self, and possible diminution of status in the community. There are social costs through increasing crime and health problems. Indeed, Oswald (1997) argues that reducing unemployment has the potential to achieve a much greater increase in the aggregate level of happiness in the community than does increase in GDP.

Government decision making

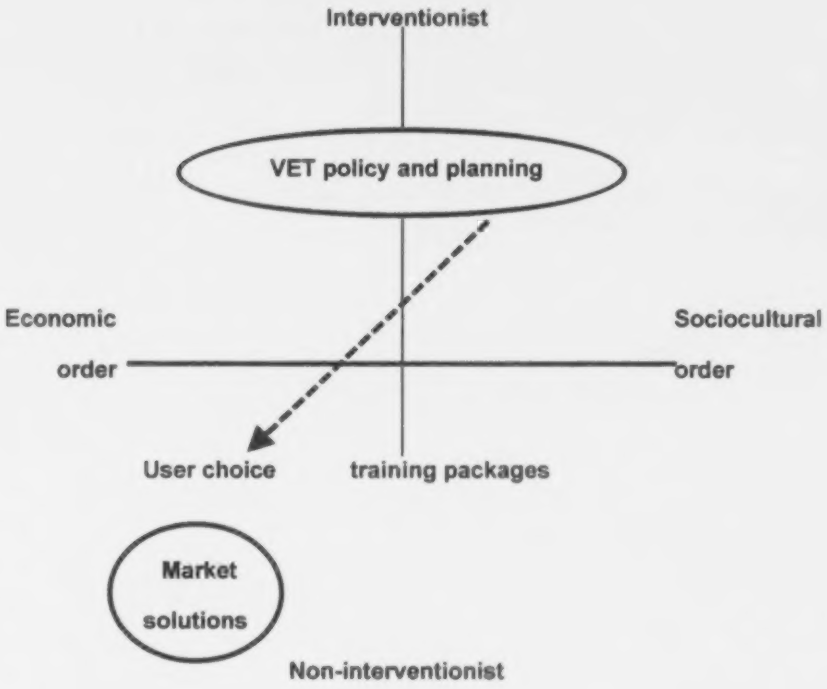
Michael Pusey employs an economic order/sociocultural order polarity to convey an understanding of changes taking place in public service processes in the 1970s and 1980s. In his book *Economic rationalism in Canberra* (1991), Pusey argues that senior ranks of the Commonwealth Public Service have undergone a fundamental shift in what he terms *political administrative discourse*. He represents the shift diagrammatically as movement along two axes, one being economic - sociocultural order, and the other being communicatively co-ordinated - systematically co-ordinated action (*ibid*, 170).

We do not wish to comment on the internal processes of the national bureaucracy, but rather to look broadly at government decision making relating to policy and planning. In doing so, we suggest that a fundamental issue is whether government decides on an active or a passive approach to achieving its objectives. We have therefore adapted Pusey's approach to yield a two dimensional model of government decision making, where one axis represents economic order/sociocultural order and the other represents an interventionist/non-interventionist dichotomy.

The national strategy

We consider *A bridge to the future: Australia's national strategy for vocational education and training 1998-2003* (Australian National Training Authority [ANTA] 1998) in the context of the model (figure 2).

Figure 2 A model of government decision making for vocational education and training policy and planning



The strategy appears to maintain a tradition in the sector of clearly enunciated commitment to both economic order and sociocultural order. For instance, Objective 3, *achieving equitable outcomes in vocational education and training*, is concerned with sociocultural order:

> People with these needs [English language, literacy or numeracy skills] are most vulnerable to economic change, finding it particularly difficult to develop new skills and change their occupation and industry as the economy restructures (*ibid*, 14)…The potential for education and training to improve people's life chances, and to give them security and satisfaction both in work and in life, has consequences for society as well as, importantly, for the individual (*ibid*, 15).

Other sections are unequivocally concerned with economic order:

> people develop the specific skills needed by enterprises and industries (ibid, 5),…development and enhancement of the national skills pool [italics as in the original] (ibid, 13).

At an operational level there is increased reliance on markets. User choice policy and training packages locate fundamental education planning decisions with employers as purchasers in the training market, with a reduced role for education providers (registered training organisations) and possibly, trainees themselves. At a strategic level however, A *bridge to the future* is interventionist. It seeks to influence the behaviour of individuals, businesses and education providers by a mixture of persuasion, inducement and regulation (table 1).

Table 1 Examples showing the multi-pronged approach of the national strategy

	Persuasive Arguments	Inducements	Regulation
Individuals	Poorer employment prospects without post-school qualifications.	Potential to gain a national qualification at any level. Multiple pathways. Access for all Australians.	Training agreements under New Apprenticeships.
Businesses	Value placed on VET by employers generally. A system better able to serve employer needs.	Funding support for development of Training Packages, their use as a tool in recruitment and other management decision making. User choice.	As above. Potential Registered Training Organisation (RTO) status.
Providers	The importance of marketing of provider services and VET's value to clients.	Competitive tendering. Incentives to address equity. Professional development to support changes in roles of staff.	RTO status. Investigation and reporting.

Furthermore, the strategy proposes to monitor its level of success through a series of key performance measures.

Like other ANTA policies, strategies etc before it, *A bridge to the future* is the product of federal, state and territory governments acting corporately. In spite of governments not being of the same political persuasion, there has been sufficient commonality in outlook and objectives to allow a comprehensive policy and planning framework to be agreed upon. Indeed, a strongly interventionist approach, we suggest, would be impossible in the absence of a high level of agreement. The federalist nature of ANTA, too, has meant that there has always been some government representation with a relatively strong commitment to intervention in pursuit of sociocultural objectives.

It would probably be a mistake to assume that it is solely the structure of ANTA that has allowed the national strategy to come about. A voluntary, federalist and less structured approach was entrenched in decision making for vocational education and training before ANTA's establishment. ANTA built on established practice. Though employers on the ANTA board and other boards and committees in the sector now constitute the dominant government recognised voice, other groups, such as unions and training providers, are not excluded. Moreover, the strategy is a distillation of ideas, values, goals, findings and experiences that predate ANTA, and that have been communicated by many people across the country over a long period. For public sector vocational education and training have constituted a nationally collaborative activity for at least two decades, in spite of being a state rather than national responsibility. The national strategy's genesis has been in interested sections of the Australian community.

Nowhere else do we see such a comprehensive policy and planning framework having the backing of the Commonwealth and state/territory governments. We contend that the vocational education and training sector's situation in this country is unique within the economic/industrial/labour market sphere, and even in the social sphere.

To see anything even vaguely like it we must look to the health sector. Here too, legislative responsibility for service delivery is with the states but complex funding arrangements with the Commonwealth necessitate a process of compromise. Even so, decision making and structures for health policy and planning do not have the corporatist character of ANTA.

The broader framework of decision making

Those portfolio areas that most interact with vocational education and training, other than the rest of education, are economic ones - finance, employment, industry with the associated area of research and development, and trade. We shall consider them only in relation to the Federal Government. Given that other governments make decisions aimed at advantaging their regions, a more thorough examination would need to consider them too. And, of course, they also seek to influence federal decision making. However, given that their influence is minimal in those areas compared to that in vocational education and training, we ignore them in this paper.

At a federal level, at least, though there is preparedness to intervene in certain circumstances, decision making is predominantly about market solutions, with minimum intervention by government - a small circle in the upper left and a much bigger one in the lower left of the model depicted in figure 2. Lombard (1998), writing on the Australian economy, states:

There has been an underlying belief in the power of market forces alone to deliver low unemployment. This adherence to new classical thinking in economics has led the [federal] government to gradually reduce its role in the economy, by embracing the concept of fiscal restraint as a panacea for [ie. as constituting] good economic management.

Similarly, current government policy declares:

> (O)ur aim [is] to liberate the capacities of private enterprise within the context of a strategic but limited role for government (Liberal and National Party Coalition 1998a, 3).

In the area of finance, the decision to deregulate predated the present Coalition Government. However, one other decision that we note to be of significance for vocational education and training was the setting up of *Invest Australia* in 1997. It is charged with responsibility for attracting investors globally to Australian industry, with intended benefits to include increased employment.

Other than for the public sector, decisions aimed at strengthening the economy have been expected to deliver employment growth. Employment creation has not been a priority. The (then) Industry Commission (1997, 18) expressed the argument against specific job creation programs:

> (B)usiness programs are mainly about increasing activity in selected areas by redistributing resources from other activities. Hence, increased job opportunities induced by special assistance from government will often be at the expense of jobs elsewhere…[Specific measures carry] the risk of 'horse trading' over the level of assistance and can lead to considerable inequities. There is also the risk of transitional assistance schemes becoming permanent.

For the duration of the Coalition's first term, it appeared that no firm decisions regarding industry policy were being made. This probably reflected a tension between ideology and practicalities. Jones (1998), in his assessment of the Mortimer Report, *Going for growth*, states:

> One has to start with the realisation that the balance of political and ideological forces is hostile to effective industry policy in this country…Governments will inevitably develop industry policies and the issue is the degree of strategic consciousness and coherence that is brought to bear on the process…The Report supports uncritically the dominant orthodox policy agenda, both at the macroeconomic level (structural budget surpluses) and the structural level (deregulation).

It seems that the various views expressed during the preparation of the Mortimer Report, and in response to it, have led to a decision to provide some support on a sectoral basis. Coalition policy now identifies certain sectors as *key industries* with continuation or introduction of various forms of special assistance (book printing, shipbuilding, information technology, pharmaceutical, automotive, and textile clothing and footwear) (see Liberal and National Party Coalition 1998b, 10-14). While the primary focus of decision making for these sectors is on stronger industries, it is also about employment.

In the area of industry research and development, the Coalition sees the issue of industry capacity for innovation as highly important. This has resulted in the establishment of the Prime Minister's Science, Engineering and Innovation Council as the principal source of advice on issues in science, engineering and technology, and relevant aspects of education and training, in accordance with a recommendation in *Priority matters* (Stocker 1997). Furthermore, the policy statement on science notes (Liberal and National Party Coalition 1998c, 8-9):

> There is a strong linkage between advances in living standards and the ability of the economy to harness advances in knowledge. The extent to which this occurs in Australia is governed by our *national system of innovation* [emphasis as in the original]. This encompasses the linkages between individual firms, research and education institutions, government support mechanisms and industry…The level and quality of our investments in research and education and the

> effectiveness of our institutions for developing, transferring and applying knowledge will become increasingly vital for sustained economic growth.

But the only references to specific educational provision are to industry linked postgraduate training in universities, and to undergraduate and postgraduate courses experiencing changing demand.

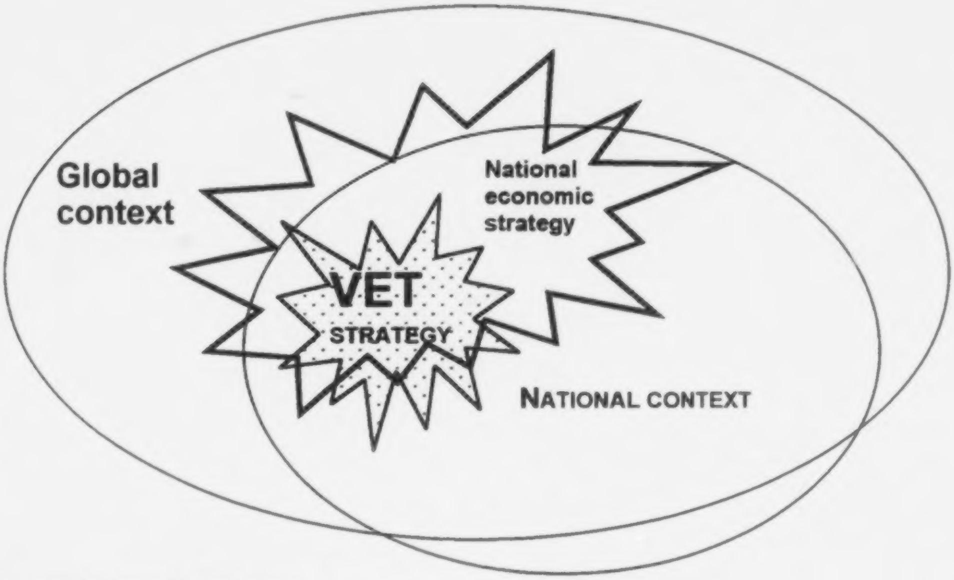
In the pursuit of international markets for Australian products, federal and state governments have chosen to provide significant assistance in the form of trade promotion. But decision making in this area is the domain of a multiplicity of national governments, international agencies, authorities etc. The Department of Foreign Affairs and Trade (1998, 4) warns:

> The international trade agenda will become more complex as domestic regulatory regimes and rules affecting investment move to the top of the list, and as pressures rise to include issues such as labour standards, the environment and competition policy.

The issue of greenhouse gasses is a recent example of where international decisions (what ever they are) directly affect Australian industry and, as a result, the nature and level of demand for skills.

We suggest that vocational education and training in Australia are underpinned, nationally, by a clearly defined complex of objectives and interventionist strategies of Australian governments. These link to a less cohesive and more market dependent assortment of strategies for the Australian economy as a whole. What is more, both sets of strategies relate to developments globally, not just nationally (figure 3).

Figure 3. The context of vocational education and training strategy in Australia



Research implications

What can we deduce from this brief overview of areas of policy adjacent to, and comparable to VET? Are there questions that research can help to answer?

One thing seems to be that governments of all persuasions accept vocational education and training as important tools, for achieving an enduringly strong economy on the one hand, and for bringing about a cohesive society that shares equitably in it, on the other.

But while all state/territory governments back the national strategy are they pursuing it with equal commitment, or are there differences.

While we find no evidence of major contradictions between *A bridge to the future* and other policy and planning, are there ambiguities that arise in interpreting policy? It would be reasonable for business leaders to interpret current economic policy as promoting an economy where labour is contracted for brief periods in accordance with short term economic goals. Employment based training has no place in these circumstances. Yet *A bridge to the future* places a high priority on employer funded work based learning. And what are the implications for enterprise customisation of competencies, where government provides funding assistance for training? Again, general economic policy might suggest that the interests of the learner are not a concern. But the national strategy implies that they are.

Where a government chooses to target an industry or region for development, are vocational education and training and/or the national strategy factored into decision making? What of compatibilities and tensions?

In an environment where government can be expected to be ideologically disinclined to target employment generating industries for assistance, is the nomination of the key industries affecting programming decisions of VET providers or their relationships with local businesses in those sectors? What are the labour market and vocational education and training implications regionally?

Has government established a view that innovation is solely the province of professionals? What are the contributions that those with qualifications at AQF levels 1-6 can make, and how might those contributions be facilitated through vocational education and training? Are they reflected in training packages? Should government review its position?

Are the skills of Australian workers a selling point for potential overseas investors in the experience of *Invest Australia*? Why or why not? What are the implications for vocational education and training?

Conclusion

Our analysis has employed a sketchy and essentially national perspective in comparing government decision making for vocational education and training with that for related economic portfolio areas. We have contended that the coming together of national and state/territory governments in agreeing to the national strategy is unique to the sector.

A more thorough examination of the policy context may raise many more questions of significance for vocational education and training in this country.

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FUTURE PATHS AND CHALLENGES FOR QUALITY AND DIVERSITY IN VOCATIONAL EDUCATION AND TRAINING

Dr. Margaret Malloch

INTRODUCTION

This paper explores implications for vocational education and training raised by a recent study: the NCVER/ANTARAC project 'Documenting Capable Organisations: Implications for Vocational Education and Training' carried out in 1997, by a partnership of researchers from Southern Cross University, Monash University and Northern Melbourne Institute of TAFE. The study concludes with a series of recommendations pertinent to Vocational Education and Training.

A sample of ten Australian organisations were studied to investigate capability in organisations, with questions focussing on organisational learning, development and change.

The organisations were a large city council, an international engineering consulting company, a cement manufacturer, a large construction and mining company, a section of a government office, a special Koorie school, a cable making company, and a chemical manufacturing company, a sub section of a Technical and Further Education College, and a state road authority.

The organisations were identified by a series of steps. The 1996 Australian Capability Network Conference with the theme of 'Applying Capability to the Workforce,' explored the question ' What is a capable organisation?' Organisations identifying with the concept were invited to make presentations which contributed to arriving at some basic concepts about what a capable organisation might look like.

With the guidance of the Project Reference Group, (itself a cross section of industry, education and training) a number of organisations were identified for study, including some who had presented at the 1996 conference. The organisations studied present a cross section of size, type, number of employees, core business, geographical location (state capital, urban, rural) and indigenous.

Methodology employed

A grounded theory methodology was employed. (Glaser and Strauss, 1967, Strauss and Corbin, 1990). An extensive literature review was developed in the initial stage. After developing a broad set of initial exploratory ideas, in consultation with the Reference Group, a series of interviews was carried out. These were analysed utilising the computer program 'Scenario' (Brooks and Daley, 1997). The study set out to gain from the interviews and the case studies an overview of the elements manifested by the organisations in their structure and operations. Finally, a search conference was conducted to discuss the emerging implications of the case study data, particularly for the vocational education and training sector. The research was guided by the project Reference Group.

The interview questions were developed by the researchers in conjunction with the Reference Group and as part of the process (Strauss and Corbin, 1990). Interviews were conducted by the three principal researchers. In each organisation, the CEO or representative and a cross section of personnel identified by the CEO were interviewed. Subsequent interviews were conducted with personnel identified through the initial interviews.

Introductory questions to the case study organisations focussed on organisational innovation, change and development, fostering of organisational capability and the role of training.

Findings

A set of indicators for capability and success were identified from the interview data. The case studies revealed a number of factors which appear to be significant as essential features of organisational capability.

Major factors appearing as significant and essential features of organisational capability were: recognition of complexity, visionary leadership, excellence of management behaviour, the presence of a learning culture, organisational adaptation and appropriate reward systems. Quality of working life was an important factor. Alignment of employees' values with those of the organisation, (both going in the same direction) was another identified general theme.

Capability and Capable Organisations

The Capable Organisation is one which 'draws on and adds to the individual capability of its members, their competence (current skills, knowledge and attitudes), their capacity (potential ability) and their values' (Hase, Malloch and Cairns, 1998:15).

The concept forming the focus for the study, 'Capability, ' is defined as: 'the confident and mindful application of both current and potential ability (competence and capacity) and values within varied and changing situations to formulate problems and actively work towards solutions as a self managed learning process ' (Cairns, 1997).

Major features of Capable Learners and Capable Organisations are:

- flexibility and adaptability
- self managed learning
- mindful awareness of capability and learning
- values bounded behaviour
- readiness and confidence to engage the unknown (risk taking).

A Capable Organisation:

- can identify Capable individuals within its structure
- consciously fosters the idea that capability and capable individuals count
- is aware of its emerging corporate capability as more than the sum of individuals' capability
- looks to being competent now but also learning for the future and using potential
- operates within a set of clearly understood appropriate values
- has management which values learning and self management of that learning
- encourages self managed teams
- understands the significance of individual and collective efficacy in developing and maintaining commitment from all involved
- has leadership which understands and drives three significant elements: values, vision and customer focus.

The Capability Learning Model argues that there are three key elements of self efficacy: specialist knowledge and skills (competence) and values which intertwine in learning. The model postulates that Capable Learning takes place across a range of 'learning planes' which encompass varying degrees of novelty on the two dimensions of tasks/problems and contexts/situations. Self efficacy is proposed as the major motivational driver in the model. (Malloch, Cairns and Hase, 1998:5)

The case study organisations were implementing, advocating and moving towards the development of the capable organisation.

> The 'organisations studied manage the complexities of operating in a turbulent environment by means of continuous change and development. They appear to do things that maximise the effectiveness of their employees by empowering them; raising their self esteem; helping them learn; increasing their ownership of what they do; and increasing the quality of working life; in short they help staff become more capable.' (Hase, Malloch and Cairns 1998:25).

Achievement of change seen in the case studies necessitates significant paradigm shifts in terms of current understanding of the functions of CEOs,' and significantly, also 'middle managers, and other employees...' (Hase, Malloch and Cairns, 1998:35). importance of learning and how people learn, the culture of an organisation and organisational structure.'

Implications for Vocational Education and Training from the Report

Factors found to be important in encouraging organisational capability were the development of learning culture, of work being intrinsically rewarding, of there being a positive quality of working life and a strong identification by the workers with the organisation's vision and values.

1. *Learning how to learn was found to be a major aspect of individual and organisational capability - an examination of how people can be assisted to 'learn how to learn' should be a focus for organisations, and vocational education and training providers.*

There was a strong focus on learning, linking this with improved performance. Creativity and lateral thinking were appreciated. Thinking outside the box' was valued.

> 'All they had to think of in the past is doing a job within a defined box, so by all this other development being available to them they're there working outside of the box. Yes, they do have their roles to perform but it's a much wider role now that includes a lot of other aspects that before was done by ... other people in again defined boxes so there was a very rigid sort of structure' (Malloch, Cairns and Hase, 1998: 17).
>
> One senior manager, said, as did many others interviewed, 'We need them to bring their brains with them because the person who's doing the job has got a far greater capability in coming up with cost - cutting solutions than the person who doesn't do the job' (ibid: 29).

2. *Shifting the emphasis from training to learning means there is a need to reconsider the traditional role of the trainer and 'train the trainer' programs. New skills such as mentoring, learning facilitation, and educational leadership will need to be built on an understanding of this paradigm.*

Curtain (1996:7, citing Gonczi 1995:16, referencing not provided) reported that in a survey of supervisors, only 58 per cent had received any training for their role of trainer, and that mostly short term training.

The professional development section of the non endorsed components of the Training Packages provides an opportunity to address the training and development of workplace trainers and assessors, for example, the manufacturing industry training board has developed materials to train 'capable facilitators' of training.

Delivery of vocational education and training has been based on a 'teaching' model, a transmission model; there is a need for learner managed learning.

3. *The relationship between competence and capability can be seen as progressive. Competence is sufficient in familiar circumstances but the unfamiliar requires more holistic characteristics associated with the concept of capability.*

Also emerging from the case study data was the finding that members of the organisations expressed the need for competence, elements of self efficacy, openness to change, the capacity to learn and demonstration of the values associated with cooperation and self reliance. Whilst competencies have a vital role in developing people, 'there is clearly a need to go beyond competency into the realm of changing values and beliefs.' (Hase, Malloch and Cairns, 1998:35)

Under competency based training, the emphasis has been on the skills and knowledge outcomes to be learnt rather than the traditional time for training. Recognition of prior learning is utilised for the formal recognition of experiences and qualifications to provide exemptions, and/or partial credits in training.

It can be argued that the forms of competency based training utilised are able to train and produce the type of people required for changing and developing organisations. The interviewees in the case study organisations mentioned that their organisations found competency based training positive in the development of skills for jobs.

Competency based training was found to be important in skills formation and this formed a foundation for further development. 'One of the six key basically business objectives for the year really revolved around continuing to develop the learning capabilities of our people and growing ...all this, their skills and breadth of knowledge.'(Malloch, Cairns and Hase, 1998: 18) What they went on to develop through a range of methods were leadership, management and people skills in organisations they consciously worked to change.

Evans, (1996:10) in her assessment of competency based education and training in the United Kingdom, advocated for education and training which utilises 'a more holistic approach,' integrating knowledge, understanding and skill, analysis and synthesis and judgements of performance. She proposed a future oriented approach which developed capabilities to operate in changing contexts, and attention to be given in training to processes as well as outcomes.

Williams, Cunningham and Stephenson (1998) have explored the relationship between the implementation of the National Vocational Qualifications and 'corporate capability.' They found that the opening up of communication, showing of greater self confidence upon improvement and recognition of competence and the development of the beginning of a culture of learning were contributing to corporate capability. A second study investigating the social milieu of learning around NVQ implementation is currently underway.

A key implication of the study is that 'Vocational education and training needs to focus on developing people for the modern workplace which is demanding holistic attributes that go beyond competence.' (Hase, Malloch and Cairns, 1998:39). Competency based training programs provided a basis for the acquisition of required knowledge and skills in the case study organisations.

4. *Initiatives in the area of work based learning and learner managed learning in Australia and overseas could be further investigated by vocational education and training providers. The role of these models in assisting organisational development should also be examined.* (Hase, Malloch and Cairns, 1998: 41).

An important aspect of flexible delivery of competency based training has been the modularisation of training and an emphasis on the learner setting the pace for learning, and a cutting back in the length of time required for training programs.

There are several centres providing work based learning worthy of further study. Examples include the Workbased Learning Centre at Middlesex University , RMIT University and Southern Cross University.

5. *Vocational education training providers, including universities could examine the use of flexible curricula which would accommodate accreditation of work based learning and learner managed learning in the workplace.*

The current vocational education and training policy emphasis is on delivery of training in the workplace. With an ageing workforce, the multiskilling of adults, and multiple career changes, flexible training and a move from classroom training has been advocated. The government aims to expand traineeships into new industries, have greater community and regional involvement and look to business to take a leading role in training. Vocational training is being extended to delivery in schools. (Greer, 1996).

Flatter organisational structures and greater participation of the workforce in the organisation are leading to greater utilisation of individual strengths. 'We need them to bring their brains with them because the person who's doing the job has got a far greater capability in coming up with cost cutting solutions than the person who doesn't do the job.' (Hase, Malloch, and Cairns, 1998: 29)

Flexible delivery enables the combination of work, family and study, and for rural distance study. (Burns, Williams and Barnett, 1997:26) Video conferencing for remote areas has shown successful in assisting module completion rates. (OTFE, 1997: 8)

6. *The development of leadership skills as well as the technical skills of management at all levels of an organisation needs to be emphasised.* (Hase, Malloch and Cairns, 1998: 41).

In relation to visionary leadership, the CEO was regarded as important in providing dynamic leadership in driving and supporting changes. 'A champion who is a visionary and has been able to steer the direction of training towards a learning organisation' (Malloch, Cairns and Hase, 1998:28)

A manager from the public sector emphasised the shift in focus to develop of people... "Our key objective would be to skill the organisation's people - our colleagues, our clients in the organisation - about how to be high performance leaders if you like, high performance people managers' (ibid: 28) .

Management and management training in Australia was identified by the Karpin Report as requiring change and improvement (Karpin, 1995).

7. *Team building and teamwork require improvement* (Hase, Malloch and Cairns, 1998: 42).

The organisations interviewed had all developed teams and team work as a key mode of worker /workforce operations.

> 'The job itself now isn't just confined to the nuts and bolts, it's confined to what is it going to take for the team to manage itself satisfactorily and that includes a whole host of other things that in the past were foreign to the ... award people. There were tasks that were performed by managers, supervisors, superintendents, foremen, you name it - now all those titles and all those positions are obsolete, the team is responsible to ensure the delivery of a cost effective safe service' (Malloch, Cairns and Hase, 1998:17).
>
> 'We have used a process for change that involved: communication, the training of facilitators/change agents, support by a central change team, self - directed work teams and work - based training.'(ibid: 27)

8. *The formation of partnerships and use of partnering may assist vocational education and training providers in the development of organisational learning cultures and capability.* (Hase, Malloch and Cairns, 1998: 42).

The Ramler Report (1998:5) recommended that TAFE Institutes (including non - metropolitan Institutes) be encouraged to form strategic alliances with partners of their choice (either other TAFEs or private third parties) to further rationalise the provision of corporate services.

Such alliances are utilised currently and this forms a basis for further research and development.

9. *Include broader aspects of human growth and adaptation in learning in human resource development.* (Hase, Malloch and Cairns, 1998: 42).

Communication and participation in decision making were important to the case study organisations. People and their development and hence their contributions were seen as a key strategic resource. (Karpin, 1995: Vol. 1: 574)

> 'Well, decisions were made behind closed doors and then they tried to sell it. It never worked because the first thing people looked for was the hidden agenda, they never listened to what was being proposed to them, whereas now they're part of that dissemination of information so they understand it.' (Malloch, Cairns and Hase, 1998:18).

Learning from mistakes and problem solving with other workers were also important factors.

> 'Where in the past the person who gave the technical support was in charge, he was the foreman, if it went wrong he wore it. Now, the individual, the operator would say to the technical process guy, 'Look, I've got a problem. I can't nut it out. What do you think I should do?' The responsibility still lies with the operator so they're having to think more, they're being challenged more and they're coming up with the goods more' (Malloch, Cairns and Hase, 1998:18).

10. *Further collaborative arrangements between TAFE, universities and private providers should be developed to enable smooth transition through the Australian Qualifications Framework.* (Hase, Malloch and Cairns, 1998: 41).

To fully utilise lifelong learning, to become a learning society, there needs to be a 'shift' in emphasis of 'post - compulsory education ' to 'a seamless system with multiple entry and exit points ' (ibid :35).

The Ramler Report (1998:5) advocated the development of cross sectoral pathways between education and training sectors to assist in the development of a skilled and flexible workforce. To date, the 'seamlessness' between sectors, and the credit transfer and articulation arrangements require attention and cooperation between all education sectors.

It would be a positive development to see an increase in joint University and TAFE research projects and for research to have a higher profile in the VET sector.

Research directions

These findings are important in providing a picture as to how a cross section of organisations are developing and encouraging the capability of both individual employees and of the organisation.

They both reinforce current research themes and also provide for some 'diversity' in trying to broaden the research agenda.

The vocational education and training sector has an operating expenditure of $3.96b with 1.46 million clients (an increase of 53 per cent between 1988 and 1997). Such a large sector requires ongoing research and development.

The State Training Board (199 *) in the document: 'A Vision for Training and Further Education,' has as objectives and strategic directions, the building of new relationships, learning through life, learning through new technologies and flexible resourcing, goals which are congruent with the findings from the study.

The OTFE Research Strategy aims to raise the quality of VET research; to have high quality well targeted research essential to inform VET policy development and planning (1995:17).

To raise research quality, a series of action proposals are suggested which involve forums, research special interest groups, conferences, register of researchers with relevant skills, links with universities, working with national bodies to develop tendering and project management processes, informing local work with input from interstate and overseas, and increasing research impact and strengthening research infrastructure. The focus over last three years has been on moving from TAFE to VET, from supply to demand, from activity to outcome, from quantity to quality and from central control to devolved system. (ibid: 17)

The NCVER writes of research for the national strategy: 'Research involves investigations which contribute to knowledge, in this case our knowledge about vocational education and training. The national strategy will focus on research which is applied in nature, which looks beyond specific contexts to produce outcomes and which has applications to both policy and practice.' (NCVER, 1997:3)

The research priorities listed are:

- economic and social implications of vocational education and training
- employment and the workforce
- pathways from school to work
- outcomes of the vocational education and training sector
- the quality of provision of vocational education and training
- future issues affecting the VET sector (NCVER, 1997:5).

Themes present in recent vocational education and training research include: investigations into VET in schools, assessor training, quality assurance, flexible delivery of training, entry level training, learning in the workplace, VET in small business, evaluation of VET in Australia, public and private provision of training, and reform in the VET sector.

Recommendations from the study

Directions for further research, reinforced by the study, include:

- development of multiskilling from competency based training
- self managed learning
- contributions to organisational capability made by team based structures enabling worker participation in decision making, access to information and responsibility for work
- the trainer as facilitator of workplace/work based training and learning becomes
- development of leadership skills in management
- development of seamless post compulsory education
- articulation/credit transfer between sectors (The AVCC/ANTA have recently initiated research into this area)
- documentation of partnership arrangements between learners, providers and workplaces

A key focus for research in vocational education and training is on a more holistic development of people for the modern workplace (including those already in the workplace, school leavers and the unemployed) (Malloch, Cairns and Hase, 1998: 21 -22) .

The case studies reinforced the usefulness of competency based training, but also pointed to further areas for development; that training employees is important.

The findings from the study also provide indications that capability in organisations could be researched further.

Dr. Gregor Ramsey, in an address at the National Vocational Education and Training Conference of 1995, with the theme Towards A Skilled Australia made the following comment:

> 'What I am more interested in is creating a learning society or a learning organisation for our TAFE systems where people are able to develop a learning relationship with their place of work, the education sector and the general community. It requires an integration of theory and practice, formal and non approaches, and the use of technology that the concept of lifelong education demands. There are tremendous curriculum implications of such a direction, much more wide ranging than the simplistic competency based approaches which are driving us at the moment. As you can see, I think there is an exciting time ahead.' (ANTA, 1995:178)

In this comment are directions for research, development and practice. In the time elapsing from Ramsey's comment, further developments to competency based training have occurred, with the advent of National Training Packages, based on National Competency Standards, to be used to train across all industry sectors; management and workplace assessor competencies have been refined; lifelong learning is a goal of UNESCO and the OECD adopted increasingly internationally, and flexible delivery and workbased education are advocated for the delivery of training. Within this context, research into self directed learning and situated learning is important.

However, to have capable societies, and capable organisations, we need to continue to reflect, analyse and evaluate our work and developments and to be prepared to step beyond the bounds of convention, conformity and fashion.

There is a need for quality research into vocational education and training which will assist in creating more organisations and workplaces where recognition of complexity, visionary leadership, excellent management behaviour, the presence of a learning culture, the nature of the organisation, and appropriate reward systems operate as a daily occurrence.

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Recommendations from 'Capable Organisations: The Implications for Vocational Education and Training'

1. Learning how to learn is a major aspect of individual and organisational Capability, as well as a core component of the learning organisation, work-based learning, flexible learning and independent learning. However, most people have not learnt this valuable skill and it is most likely that their education and training experiences have been as dependent learners. Examination of how people can be assisted to 'learn how to learn' should be a focus for organisations, and vocational, education and training providers.

2. Shifting the emphasis from training to learning means there is a need to reconsider the traditional role of the trainer and 'train the trainer' programs. Flexible learning methods,

flexible curricula, learner managed learning, Capability and learning organisations need to be fully understood. new skills such as mentoring, learning facilitation, and educational leadership will need to be built on a sound understanding of this new paradigm.

3. The relationship between competence and capability can be seen as progressive. Competence is sufficient in familiar circumstances but the unfamiliar circumstance requires more holistic characteristics associated with the concept of Capability.

4. There are some current initiatives in the area of work - based learning and learner managed learning in Australia and overseas that can be further investigated by vocational education and training providers. In particular the role of these models in assisting organisational development should be closely examined.

5. Vocational education training providers, including universities, could examine the use of flexible curricula that would accommodate the accreditation needs of work - based learning and learner managed learning in the workplace.

6. There needs to be a greater emphasis on developing leadership skills as well as the technical skills of management at all levels of the organisation. As organisations become flatter, more flexible and responsive, team based, outsource, and become more like networked organisations they will be looking for people with strong leadership abilities as well as the capacity to learn.

7. Examine how team building and teamwork can be better learnt given that current techniques, particularly the use of experiential exercises, are limited in their success and direct application to the work environment.

8. Partnering and the development of partnerships are key strategic approaches for the modern organisation. Vocational education and training providers might learn a great deal about how to create learning cultures and Capability by forming learning partnerships with public and private sector organisations.

9. Consider how learning in human development can include some of the broader aspects of human growth and adaptation.

10. Further develop collaborative arrangements between TAFE, universities and private providers that enable a smooth transition through the Australian Qualifications Framework.

EQUITY AND LOCAL PARTICIPATION IN VET: SOME PRELIMINARY FINDINGS IN SYDNEY POSTCODES

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ABSTRACT

Empirical findings are presented from a current study of patterns of local participation in VET in greater Sydney using uses national statistics and census mapping software. The study is predicated on the assumption that the 'community' dimension' of equity in VET has been neglected by the current emphasis on the representation of 'target equity groups' with little regard for the socio-economic distribution of disadvantage. The article reviews three research approaches derived to local equity analysis before presenting data showing participation rates in urban Sydney postcodes. The case is argued for national equity to reconsider the role of local provider equity strategies.

This working paper will briefly review the reasons for giving more attention to the local dimension of equity research, describe some possible approaches and present some preliminary findings on TAFE participation rates in greater Sydney postcodes using state statistics and census mapping software.

Here I do not give in full a justification for local analysis, or provide an extensive discussion of the rationale and methodology for local participation studies since I have attempted to do this in a forthcoming article (McIntyre forthcoming).

While I will refer to the 'target equity groups' of current policy, the paper seeks to question the way such categories have been employed to understand disadvantage and access and equity in VET. The 'target equity groups' include Aboriginal & Torres Strait Islander peoples, people of NESB, disabled, rural and certain groups of women who are typically unemployed or not in the workforce, or over-represented in low skilled work and have less opportunities for training on-the-job (ANTA 1996).

The need for local equity analysis

There is a need for research to turn its attention to the 'community' dimension of equity policy in VET in Australia, in the face of the trend for policy to abandon 'supply side' solutions. There is a need to monitor how equity is being achieved on the ground at the provider level.

There are several reasons for urging such research. One is the current emphasis of equity policy which appears to have downgraded the central role that TAFE providers were given in achieving equity. Current ANTA policy emphasises the need to look beyond barriers to participation in VET the development of strategies which will improve the outcomes of participation of 'target equity groups'. The emphasis is on increasing equity outcomes by encouraging industry to link training and employment and by 'supporting individuals from under-represented groups in training and employment' within the existing framework rather than through funding of specific access and equity programs offered by training providers (ANTA 1996).

This policy approach highlights participation and its outcomes. The particular barriers faced by disadvantaged groups are identified and strategies appropriate to these groups developed. There is an emphasis on defining and assessing progress on outcomes of participation and it is recognised that access and equity has multiple components, including the design of relevant training, elements of social and cultural learning, employability and life skills, and language, literacy and numeracy skills, and student support measures (ANTA 1996).

However, its key notion of the 'representation' of 'target equity groups' tends to be employed in ways which deny the harsher realities of social and economic inequality and educational disadvantage. It has been necessary for VET equity researchers to try and reassert the compound nature of social and economic disadvantage, meaning, the statistical association of low educational levels, poor employment, poverty, isolation and cultural group membership, where individuals have 'multiple memberships' of equity groups (Golding & Volkoff 1997; Volkoff & Golding 1998, McIntyre 1998).

The shift to an industry and employment focus also means that the role of providers is no longer so central. While it is right to emphasise that employment is now key to access to training on-the-job, emphasis is no longer on locally responsive providers and their equity strategies. Yet social and economic and geographic location intersect to compound inequalities in education. The fact remains that social and economic disadvantage is concentrated in particular localities, and this is not to be understood as referring simply to people living in remote and rural localities.

Thus I to argue that we need to explore in what ways *area of residence* is influencing VET participation and its outcomes. Where members of the 'target equity groups' live will influence their chances of participating in employment, employment and education and training. It needs to be asked to what extent there is an unequal distribution of 'opportunities' to participate in VET that is mirrored by area of residence, in both urban and rural localities. The social facts of unequal distribution of income, employment are well-known and often publicised (eg Gregory's studies of increasing income gaps between poor and rich neighbourhoods). There appear as yet to be have no such studies of VET participation.

It can be argued that the effectiveness of employment-based strategies is likely to be undermined if they do not take into account the characteristics of labour markets in different localities and regions. The very capacity of TAFE to implement industry and employment-based strategies is unequally distributed, since some regions are better placed to implement such strategies, and the burden of achieving 'equity outcomes' is not evenly shared across labour markets, local employer networks, TAFE institutes or government agencies (McIntyre, forthcoming).

It is also important to ask questions about advantaged groups and their use of VET, in the context of equity research. To what extent do relatively advantaged (employed and educated) individuals consume the resources allocated to a locality or region? It would be a serious charge from an equity point of view that TAFE participants in 'disadvantaged' areas were relatively 'advantaged' individuals. Thus in areas with high indigenous population, it is crucial to know to what extent are courses and facilities monopolised by non-Aboriginal people living in the area? In areas of high unemployment, to what extent does TAFE cater mainly to employed people? Such questions illustrate what is meant by the distributional justice assumptions of local equity analysis.

Finally, it is important to reassert the need for a provider perspectives on equity in VET, and to ask what incentives national policy gives to TAFE institutes to develop local strategies to address localised disadvantage. This perspective requires a body of evidence about patterns of participation at the local level. Again, researchers ought not to be deterred from continuing to ask 'supply side' questions of policy and provision, from questioning the distribution of public resources.

Approaches to local equity analysis

Local analysis studies the characteristics of participants in who participants live or work in a certain area. The characteristics of VET participants living in a postcode can be compared with the characteristics of that locality in general and with the profile of VET participants in the region or state using a 'profiling' methodology. Thus the 'representation' equity groups in particular areas may be explored using information about VET participants from AVETMISS and Census mapping software such as Cdata96 (ABS 1998b). Here client home postcode is a key item linking the datasets.

Elsewhere I describe a conceptual model of VET participation which is a holistic or ecological in character (McIntyre forthcoming, McIntyre Brown & Ferrier 1996). This model assumes that who participates is a complex product of provider, area and clientele factors. Local equity analysis gives particular attention to the nature of the locality and the 'catchment' of a provider, where a range of demographic, social and economic factors, including the characteristics of local clienteles, have an impact on what is demanded and what is be provided (McIntyre et al 1996).

Local participation patterns reflect the demands of clienteles for types of courses, where some clienteles make more demands than others on providers, and have greater inclination and capacity to take certain courses, in terms of the personal and financial resources required to do so. Demand is affected not only by the financial costs to participants but cultural costs - whether what is provided is culturally accessible and amenable to groups residing in an area. Demand is known to be depressed by lower levels of educational qualification, levels of employment and labour force participation and lower occupational differences. Employment itself is arguably the single most important factor now giving access to adult education and training (McIntyre & Crombie 1996, ABS 1998a).

Providers are influenced, it can be argued by the demands of clienteles for certain types of courses. They take resource allocation decisions in the light of policies and the social and economic character of a locality, and their assumptions about the kind of participants they expect and want in programs. Such tendencies are amplified in a user-pays system and a competitive training market. From the perspective of equity policy, it is exactly the point that providers resist targeting disadvantaged clienteles who pose 'difficulties' for normal practice and require additional (due to lack of personal and financial resources). Hence, targeting strategies often assume that providers need to be persuaded to provide for under-represented groups by targeting resourcing to their increased participation, and even then they may be reluctant (Lundberg and Cleary 1995).

The conceptual model suggests three possible approaches to local equity analysis which are described in detail elsewhere (McIntyre forthcoming):

1. *Area participation analysis* compares a large number of areas in terms of their rate of participation for a given year and in terms of the profile of their VET participants, without regard to where participants are attending. Home postcode is used to calculate various participation rates (the number of students enrolled in VET in a given year expressed as a proportion of the population aged over 15). Then differences in among high and low participation postcodes can be examined in terms of social and economic indicators known to be associated with adult participation, such as higher levels of education, occupation and income. From an equity perspective, the question is what participation rates disadvantaged areas have, and what is the profile of their VET participants. To what extent are 'equity groups' who are strongly represented in the area also represented in the VET profile?
2. *Catchment analysis.* This examines participation from the standpoint of particular providers in the VET system (TAFE, ACE, private) and asks what postcodes make up their nominal catchment. From an equity perspective, the interest is whether providers in 'disadvantaged areas' are delivering programs in those postcodes and to what extent they are targeting more 'advantaged' areas. An important function of catchment analysis is establishing the extent to which participation is local rather than diffused (for some ACE examples, see McIntyre Brown & Ferrier 1996).
3. *Provider equity analysis.* A third kind of analysis builds on the results of catchment and local participation studies to ask what kind of participants are represented in the enrolments of a provider based in a locality or region. The key equity question is to what extent a provider is targeting the 'equity groups' which are strongly represented in the nominal catchment, as reflected in the provider's participant profile.

A study of 1996 VET participation in greater Sydney postcodes used the first of these approaches. It is not possible here to go into detail about the methodology employed, but some general features need comment.

Various *participation rates* are calculated from NSW TAFE client statistics, including gross TAFE participation (the proportion of the area population aged over 15 participating in VET) and several specific indices: Stream 2 participation, vocational participation, employed participation, and low schooling participation. Indices can also be calculated youth participation and for some target equity groups.

Postcodes are grouped in terms of their participation rates (by sextile) and compared in terms of social indicators generated from Census data, in order to 'profile' or represent the characteristics of people living in an area. The focus in the Sydney postcode study is on education, employment and income indicators, as distinct from specific socio-cultural disadvantage such as the proportion of Aboriginal or Torres Strait Islanders or non-English speaking people living in a location.

Home postcode of the TAFE client is the key piece of information provided by national VET statistics (AVETMISS) which can be linked to 1996 Census data. Postcode 'locates' the client in terms of the socio-economic profile of the area and the pattern of VET participation in the area of residence. In urban areas, postcode is a small enough unit to capture variability in such characteristics, whereas these variations tend to be smoothed out in larger units such as local government area.

Local equity analysis makes working assumptions for testing equity in VET on the basis that if a postcode has large proportions of people with low educational levels, no qualifications, low labour force participation, high unemployment or low incomes, then it is reasonable to expect that the profile of VET participants from these areas ought to 'represent' such populations if VET providers are responding to disadvantage of this kind.

There are various conceptual and methodological issues surrounding the nature of social indicators, the relevance of the ABS SEIFA disadvantage indicators (social indicators for areas), the quality of TAFE statistics and so on .

Findings: TAFE participation in Sydney

The study of Sydney postcodes is limited to TAFE participation in its first phase, though an earlier study (McIntyre et al 1996) examined ACE participation in NSW in a similar methodology. The study links TAFE client data for 1996 to Cdata96 which marries census databases to GIS mapping software. The reference year was the census year 1996.

The aim was to compare Sydney postcodes in terms of various rates of TAFE participation rate and to examine differences among the high and low participation postcodes. The primary equity focus of the study was the question of whether TAFE participation in Sydney postcodes was related to their employment and educational levels. A secondary question is to what extent particular equity groups known to be concentrated in a given postcode are represented among TAFE participants residing in that postcode. No assumptions are made about where these residents attend TAFE.

The main findings of the Sydney study are:

1. TAFE participation in Sydney is highest in the outer Sydney postcodes of outer western and south western suburbs, and lowest in the more affluent inner city suburbs (which have higher university participation). Postcode participation rates of various kinds correlate strongly with socio-economic indicators of education, occupation and income.

2. The high participation postcodes in outer south-western and western Sydney include many areas regarded of relative disadvantage, in conventional terms, as indicated by relatively lower educational levels (post-school qualification held), 'blue collar' occupational profiles (eg higher proportions ASCO occupational major groups 7,8 and 9) and lower household incomes.

3. What is true for general TAFE participation in a postcode (all TAFE clients as a proportion of the postcode population aged 15 and over) is reflected in other more specific rates of participation including: the vocational rate (stream 3000 and 4000 clients); the employed client rate, the unemployed client rate and the 'low schooling'

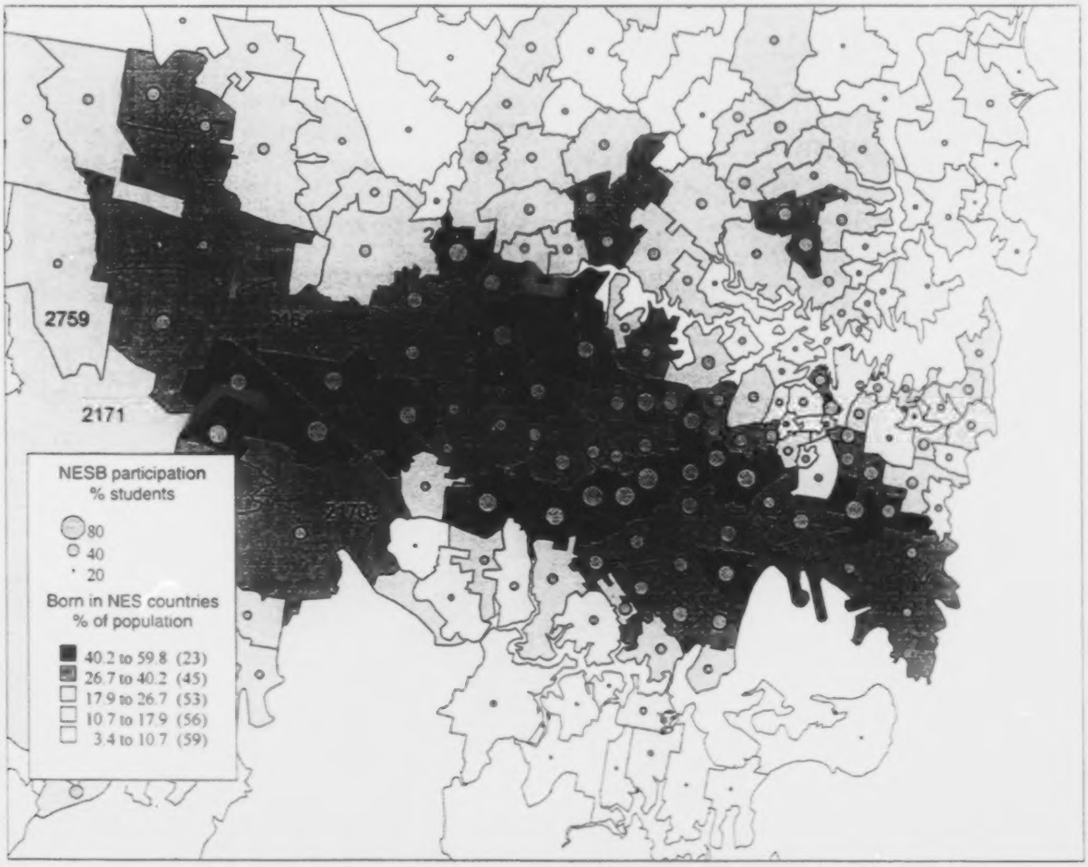
rate. These more specific rates indicate to what extent relatively socio-economically disadvantaged (unemployed, those with low schooling levels) are participating.

4. Those postcodes which are high on social indicators of non-English speaking background have in general, very high NESB TAFE participation rates. Postcodes with relatively large populations of indigenous people also have high ATSI participation rates.

Figure 1 provides an example of the mapping of TAFE participation data on to social maps. Inner western Sydney postcodes have high concentrations of people born overseas in NES countries. These postcodes also have high rates of participation by NESB TAFE students compared to other postcodes. This suggests that local populations of NES residents were enrolling in TAFE in significant numbers and perhaps, that TAFE is meeting the needs of many NESB client groups. To what extent this is occurring, and to what extent occurring locally, and whether the outcome of particular strategies for these groups, are among the questions raised by this snapshot of participation.

Figure 1

NESB TAFE participation by students of non-English speaking background living in inner Sydney, 1996
Source: Cdata96 and NSW TAFE statistics)



The following tables provide further details of the findings of the study that may be of interest to VET researchers. Table 1 shows Sydney postcodes by sextile, with mean values for several rates of participation including rates for employed and unemployed students. The highest participation postcodes also have the highest proportions of unemployed students enrolled and rather lower participation in nominally vocational courses (streams 3000 and above).

Table 2 provides social indicators for the same sextiles, which suggest that the highest participation rates occur in the most disadvantaged postcodes as reflected in these indicators, while Table 3 summarises some correlation coefficients among rates and indicators. This data is of course broad-brush and represents work 'in-progress' rather than a final report of the study.

Table 1. Participation rates* of Sydney postcodes, 1996, sextile means (n=235)

Sextile	GrossPart	VocPart	Employed	UnEmply	Year 10	Voc as %
1	9.3	7.0	47.9	21.4	13.2	75.1
2	7.8	6.1	54.2	19.3	12.2	78.1
3	7.0	5.7	58.4	17.7	11.0	81.6
4	6.4	5.3	60.8	16.0	10.8	82.3
5	5.5	4.5	58.0	16.9	11.4	81.1
6	4.1	3.4	57.4	15.5	10.6	81.2

* Definitions: GrossPart, TAFE clients in all streams as a proportion of the postcode's enumerated population aged 15 or over; VocPart, TAFE clients in streams 3000 and 4000 as a proportion of the same population; Employ, Proportion of TAFE clients who are employed part-time or full-time at time of enrolment; UnEmpl, proportion of clients unemployed at enrolment; NILF, proportion of clients not in the labour force at enrolment; Year 10, proportion of clients who stated they have prior schooling of Year 10 or less. VocProp, proportion of clients in Streams 3000 and 4000 as proportion of all clients. Note that enrolments in Stream 1000 while included are very small in total.

Table 2. Some social indicators, Sydney postcodes by TAFE participation rate, sextile means (n=235)

Sextile	HiQual	LoQual	HHI50	LabFor	UnEmploy	Occu123	Occu789
1	17.3	14.3	13.4	61.6	9.2	33.0	27.7
2	17.2	14.0	15.1	60.6	8.3	36.7	26.8
3	19.0	14.9	16.0	63.1	7.2	37.6	24.2
4	21.1	14.4	19.8	63.2	6.1	39.8	21.7
5	22.5	12.8	20.2	61.8	6.4	42.0	21.8
6	33.8	10.3	31.5	63.1	4.3	57.1	13.2

Table 3. Correlations of TAFE participation rates and socio-economic indicators*

	Education & Training				
Participation:	HiQual	LoQual	AllQual	Attd TAFE	Attd All
General (all clients)	-0.5	0.3	-0.4	0.7	-0.1
Vocational streams	-0.4	0.5	-0.3	0.6	-0.1
Employed clients	0.2	0.3	0.3	-0.1	-0.1
Clients NILF	-0.1	-0.5	-0.3	0.2	0.2
Clients Year 10	-0.7	0.6	-0.5	0.2	-0.5
	Occupation and Labour Force				
	Occu123	Occu456	Occu789	LaForPart	Unemp
General (all clients)	-0.5	0.4	0.5	-0.1	0.3
Vocational streams	-0.5	0.5	0.4	0.1	0.2
Employed clients	0.2	-0.1	-0.3	0.3	-0.4
Clients NILF	-0.1	0.0	0.2	-0.5	0.4
Clients Year 10	-0.6	0.6	0.5	0.1	0.2
	Household Income & housing				
	HHInc<20	HHI>50	OwnBuy	RentDwell	HighMort
General (all clients)	0.2	-0.5	0.1	-0.1	
Vocational streams	0.1	-0.5	0.2	-0.2	
Employed clients	-0.3	0.3	0.2	-0.2	
Clients NILF	0.2	-0.2	-0.2	0.2	
Clients Year 10	0.1	-0.6	0.3	-0.3	

* Definitions of indicators: *Education & Training.* Indicators refer to the proportion of enumerated population aged 15 or over. HiQual, the proportion (%) holding an associate diploma or bachelor degree or above; LoQual, holding a skilled vocational or basic vocational qualification; AllQual, the proportion holding any post-school qualification; AttenTAFE, proportion attending TAFE at the time of the Census; Atten All, proportion attending TAFE university or other institution. *Occupation and Labour Force.* Occu123, proportion of employed persons in first three ASCO major occupational groups (including professionals, manager and associate professionals); Occu345, proportion of employed persons in major groups 3, 4 and 5 (tradespersons, advanced clerical workers, intermediate clerical workers), Occu789, proportion of employed people in ASCO major groups 78 and 9 (intermediate production workers, labourers). LaForPart, labour force participation rate, the proportion of population aged 15 or over employed or seeking work in Census week; UnEmpRate, unemployment rate. *Household income & housing.* HHI>50K, proportion of households having an annual household income of over $52,000 in 1996; HHI<20K, proportion having an annual household income of less than $20,800 in 1996; OwnBuy, proportion of dwellings owned or being purchased; RentDwell, proportion of dwellings being rented; HighMort, proportion of households with annual household incomes under $50,000 with a monthly mortgage of more than $1000.

Conclusion

On the face of it, TAFE participation is highest in areas where relatively disadvantaged people are living. That is, people in the target equity groups living in these areas are participating in TAFE in significant numbers. This is to ask what providers are doing to bring this about, particularly what equity strategies they are following. Research also needs to know more about the exact nature of the participation of particular groups of clients. In inner western Sydney, what courses are being taken by the large numbers of NESB students? How is this participation distributed by age or gender or employment status?

From this perspective of local participation analysis, future research might look in a number of directions:

- Seek for less simplistic policy understandings of educational disadvantage to underpin equity research in VET. Policy currently misrepresents the compound nature of social disadvantage. If research is right, local participation of equity groups is a very significant feature of TAFE provision, suggesting that equity is being achieved at the provider level. This dimension of equity needs to be written back into policy. How, for example, are these participation patterns related to ANTA's current emphasis on employment-based equity strategies, which are likely to be achieved at the local level?

- Conduct regional and local studies of participation in VET, closely analysing the equity strategies followed by providers. It is particularly important to establish to what extent providers are responding to 'compound disadvantage' rather than nominal equity status. (The data on local NESB participation may reflect the success of highly motivated and relatively advantaged NESB students accessing TAFE).

- Make comparisons of different kinds of providers, to examine the nature of the local equity clienteles served. Studies in a locality or region might explore to what extent ACE neighbourhood houses and TAFE institutes perform complementary but different roles in achieving equity outcomes. Here a pathways perspective is important, because this is potentially the key role that local agencies can fulfil, for example, ion bridging disadvantaged clients to employment and training. The role of community-based agencies is particularly worthy of further research.

NOTE

This project is part of the 1998 program of the Research Centre for Vocational Education and Training at the University of Technology Sydney funded as a key national centre by the Australian National Training Authority. The project is part of an ongoing study of VET participation at the local and regional level.

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RESEARCH ON THE ECONOMICS OF VET: THE CEET RESEARCH PROGRAM

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ABSTRACT

The paper outlines the broad framework and key themes of the 1999 research program of the ANTA-funded Monash University-ACER Centre for the Economics of Education and Training. Key research and policy issues concerning the economics of vocational education and training (VET) are identified and their implications discussed.

Development of the field

The 1993 strategic review of VET research and development identified "Policy and Economics" as one of the major areas of research need in Australia (McDonald et al, 1993, p. 42). The review conceptualised the area as being primarily concerned with "The economic benefits of vocational education and training - both at the micro and macro level, including the relationship between education and the economy and the training agenda".

It is not surprising that research on the economics of VET was accorded such high priority in the 1993 review. To a greater extent than in other fields of education, the debate about VET has a strongly economic flavour, either in terms of the productivity and earnings benefits than will (hopefully) flow from greater public and private investment in VET, or the role that financing mechanisms play in governing access to VET opportunities. Of course, the debate about VET involves far more than economic considerations, but the economy provides a persistent, and insistent, backdrop to the field as a whole. The bracketing of "Policy and Economics" in the 1993 strategic review underscores the central role that economics plays in VET decision making - as well as pointing to the direction that research should take.

What is perhaps a little more surprising is that there has, in fact, been very little systematic research on the economics of VET, or on other fields of education for that matter. Various suggestions have been offered for this lack of research attention, including the lack of clear outcomes data for much education and training activity, and the limitations of economists' tools for analysing the "black box" of education and training processes. It has also been suggested that academic economists are little interested in applied research, although the comparative strength of economic research in other applied fields, such as health, would seem to belie this.

To help fill this research gap the Economics of Education Network was founded in the mid-1980s by Ross Harrold from the University of New England as a forum for bringing together the work of those interested in the economics of education. In 1992 the area received an institutional framework through the establishment of the Centre for the Economics of Education and Training (CEET). The Centre is a joint research centre of Monash University (the Faculty of Education and the Faculty of Business and Economics) and the Australian Council for Educational Research (ACER). Since 1997 CEET has also had a collaborative relationship with the Department of Vocational Education and Training (DVET) at the University of Melbourne. In 1993 ANTA commissioned CEET to conduct the first major review of the economics of VET in Australia (Burke et al, 1994), and now provides support through the National Key VET Research Centre program.

The Centre is an interesting example of a cross-Faculty, cross-disciplinary and cross-institutional research grouping. This structure, the links with VET policy makers and practitioners that have been established, and the program that has been generated, help provide insights into key issues facing research in this area.

Identification of the research agenda

The 1994 CEET review commissioned by ANTA argued that analysis of the economic benefits of VET needed a dual focus. The work clearly needed to conceptualise and measure the contribution of education and training to economic and social development. It also needed to better understand the implications for VET of the changing nature of the Australian economy. Both of these foci require that researchers understand the VET sector itself. From an economic perspective, "the benefits of VET" refer to the *net* benefits, that is the gains that remain after the resources and costs involved have been deducted. Consideration of the benefits of VET also has a strong distributional element - which individuals and groups receive the benefits, and who pays? It is simply not possible to consider questions of the level and distribution of costs and benefits through VET without detailed knowledge of the sector itself. Self-evidently, the VET sector does not exist in isolation from wider developments in society. A key part of the research agenda, therefore lies in better understanding how VET is shaped by, responds to, and anticipates economic and social change.

The emphasis in the CEET research program on better understanding the *operations* of the VET sector to help build knowledge of the *interactions* between VET and the wider economy and society is evident in the research program conducted since 1994. Research at the macro level has included analyses of changing skill requirements in the Australian labour market and their implications for education and training, the determinants of public and private expenditure on education and training, and the factors shaping access to education and training by disadvantaged groups. Research at the micro level has included detailed analyses of institutional and program costs, and enterprise investment in training. These themes are reflected in the national conferences that CEET has organised (Ferrier & Selby Smith, 1995; Selby Smith & Ferrier, 1996; Ferrier & Anderson, 1998). What is perhaps not so evident are the implications of this approach for the process by which the research program is identified and projects conducted.

Key stakeholders from the VET sector help shape the CEET research program through a VET Advisory Committee that includes representatives from ANTA, state training authorities, TAFE institutes, private providers, employers, and VET researchers. The need for close interaction with the VET sector has also encouraged CEET to engage in collaborative research projects, and to build a staffing profile that includes people with extensive VET experience and a variety of discipline backgrounds.

The 1999 research program

The title of CEET's 1998 research conference, *Rapid Economic Change and Lifelong Learning* was chosen on the basis that it brings together the dominant contextual issue that VET must address, and the over-arching policy response upon which VET should focus. It is the main theme around which CEET's 1999 research program is structured.

The priority attached to this theme is evident in a number of recent policy documents from ANTA and other VET authorities (e.g. NCVER, 1997; ANTA, 1998). Examination of these documents and consultation with the CEET VET Advisory Committee suggested three broad VET policy objectives that relate directly to CEET's interests and expertise:

1. an Australian labour force that is equipped to support, and participate equitably in, an economy that is competitive in global terms. This objective relates to the imperatives of *rapid economic change* and is concerned with the *outcomes* of the VET system, and the *context* within which VET operates.
2. public and private vocational education and training that equitably delivers quality outcomes in a cost-effective manner. This objective relates to the role of the VET sector

as an integral part of a *lifelong learning* framework, and is essentially concerned with *structures* and *processes* within VET.

3. decision-makers in VET who are outward-looking, conscious of different possible futures, and aware of how the broader economic and social context affects VET policy and delivery. This objective concerns the development of the *knowledge base* that informs VET decision making, and relates to CEET's responsibility to *actively engage* with the VET sector and to *effectively disseminate* its work.

These broad policy objectives provided a means of focusing the overall theme of *Rapid Economic Change and Lifelong Learning*, and led to the identification of seven new projects to be supported through the ANTA Key Centre grant. The seven projects are listed below and elaborated in the Appendix.

Within each broad area, one *large project* will be conducted. The large projects, which will involve substantial staff resources during 1999, are intended to consolidate and synthesise findings from the large range of studies now available in the fields concerned. This approach was adopted because of the concern expressed by the VET community that VET research in general is characterised by a large number of small-scale research projects, and that Centres can play an important role in drawing the research together and distilling its key findings and implications. Within CEET itself there was also a view that this is an appropriate time to review recent research and policy developments as a means of identifying the next generation of research questions on the economics of VET.

The other four projects in the 1999 program, which will involve fewer resources, mostly involve new areas of development for CEET.

Area 1: Research on the outcomes and context of VET.

Large project

- Occupational and skill changes in the Australian economy and their implications for education and training

Other projects

- Enterprise training, earnings and productivity to gain extra skills (N=347, 61.7%)
- Reporting and managing human resources in enterprises

Area 2: Research on structures and processes within VET.

Large project

- The costs and financing of education and training

Other projects

- VET teachers and lifelong learning
- VET and the voluntary sector: conceptualising the issues

Area 3: Research to improve the knowledge base for decision making on VET.

Large project

- Update and review of recent developments in the economics of education and training

In addition to these projects CEET will also conduct a range of specially commissioned studies during 1999 for NREC and various state and national authorities. It will also maintain a substantial dissemination program for the VET sector in terms of conferences, newsletters, publications and workshops.

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APPENDIX

CEET's 1999 research program supported through the ANTA Key Centre Grant

Short Title	Rationale and Outline	Intended Outcomes
Objective 1: An Australian labour force that is equipped to support, and participate equitably in, an economy that is competitive in global terms (VET Outcomes and Context)		
Large Project Occupational and skill changes in the Australian economy and their implications for education and training	The demand for new forms of education and training is in large part derived from changes in the structure of occupations and skills required in the economy. Changes in these requirements derive from changes in the pattern of demand for goods and services, and new ways of organising work to meet those demands. The continuing pressures to open the Australian economy to overseas and domestic competition, and technological changes, mean that some types of occupations and skills are in decline while others expand and develop anew. There is an on-going need to analyse changes in the structure of occupations and skills, the causal factors that are at work, and the impact of such changes education and training provision.	The project would draw together the empirical findings and policy implications from a range of CEET and other research. It would provide more detailed analysis than is currently available from any single source on trends in the occupational and skill structure, including the age and gender distribution of occupational groups, and the factors driving occupational change. The results would be disseminated in papers and presentations to education and training policy makers.
Enterprise training, earnings and productivity	A key requirement for the development of a training culture in enterprises is to increase the pay-off from training in terms of higher earnings for employees, and higher productivity for enterprises. This project would use multivariate techniques to analyse ABS and other national data to determine the level and distribution of benefits from different forms of training. Preliminary work on the data sets indicates that a high level of disaggregation will be possible.	The project would provide an improved understanding of the benefits of enterprise training in Australia, and the returns to different forms of training. The work would be underpinned by a review of existing studies. The results would be communicated via papers and conferences to policy makers, HR development practitioners, and researchers.

Reporting and managing human resources in enterprises	One way to focus attention on the benefits of human resource development is to more systematically measure, and report on, the stock of human resource assets in enterprises. Better human resource reporting would improve the internal management of human resources, as well as the external efficiency of the allocation of capital to enterprises. This project would involve case studies of a small number of enterprises that are developing new reporting tools in the HR area.	The project would help provide increased incentives for investment in human resources by better measurement and reporting of enterprise HR stocks. Write-ups of the case studies would be directed principally at VET policy makers and the HR development community.
Objective 2: **Public and private vocational education and training that equitably delivers quality outcomes in a cost-effective manner (VET Structures and Processes)**		
Large project The costs and financing of education and training	Policy initiatives to improve learning outcomes through means such as new learning technologies, and the opening up of lifelong learning opportunities, need to be underpinned by detailed analyses of their cost implications and possible financing mechanisms to bring them about. This project would attempt to fill some of the substantial knowledge gaps in the costs and financing of Australian education and training, especially at the micro level.	The project would provide a better understanding of the level and composition of costs in different education and training sectors and programs, and how various financing mechanisms may contribute to efficiency of operation and equity of access. The results would be presented in a book that discussed the conceptual and methodological issues, as well as empirical results.
VET teachers and lifelong learning	The VET sector is increasingly orienting itself to providing students with the skills and attitudes to be effective lifelong learners. However, there is evidence that VET teachers participate to only a limited extent in professional development intended to keep them up-to-date in the dynamic environment in which they now operate. The project would build on the current work on trends in the TAFE workforce to examine how to support VET teachers from a lifelong learning perspective.	The project would provide a clearer understanding of the professional development needs of VET teachers within a lifelong learning context, and examples of good practice in this regard. The papers and workshop presentations from the project would be aimed mainly at policy makers in state training authorities, and staff in VET institutes.
VET and the voluntary sector: conceptualising the issues	The voluntary sector is serving increasingly important social and economic purposes as paid employment declines and the role of government is being redefined. However, there has been little explicit consideration as yet of the implications of the growth of this sector for VET providers, and how the interactions between the two sectors can be enhanced. This project would start the process of a conceptual mapping of the issues involved.	The project's main task of would be to organise, and write-up, a seminar that would bring together key stakeholders in the voluntary and VET sectors to discuss issues of mutual concern. A key purpose of the seminar would be to consider the implications of an increasing role for the voluntary sector in a society with a diminishing demand for paid labour.
Objective 3: **Decision-makers in VET who are outward-looking , conscious of different possible futures, and aware of how the broader economic and social context affects VET policy and delivery (Knowledge Base for VET Decision Making)**		
Large project Stocktake of developments in the economics of education and training	In 1994 CEET produced a major review of the economics of education and training in Australia. This project would update the earlier work by reviewing developments since 1994 in the structure of the Australian labour market, the factors that shape the demand for, and supply of, education and training, policy and practice in education and training, and new findings from research.	A state-of-the-art review of the economics of education and training in Australia, including the identification of major gaps in the knowledge base, and priorities for future research work. The main audience for the review would be VET policy makers.

WHAT DIFFERENCE DOES A RESEARCH CENTRE MAKE?

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Introduction

The 1992 Strategic Review of Research in Education argued that educational research in Australia needed to be reoriented towards more team-based work focused on national priority areas. As one part of that reorientation it advocated the establishment of key research centres.

> Key research centres create an environment in which challenging, complex and sustained research can be conducted. Provided that the centres are adequately funded, experienced researchers can be freed to concentrate their energies on major problems. Less experienced researchers can be provided with the opportunity to work on a variety of research tasks in a team atmosphere. Key centres also have the potential to benefit from scale economies in research infrastructure such as library materials, computing, research assistance and administrative support. (McGaw et al, 1992, p. 85)

If anything, VET research was even more fragmented and short-term than research on other areas of education in the early 1990s. It was not surprising therefore, that the 1993 review of VET research also argued for the allocation of resources to achieve a "critical mass" of researchers and research projects in areas of high priority (McDonald et al, 1993, p. 15).

Neither review advocated that all the research in priority areas should be concentrated in key research centres. Indeed, both argued for the benefits of diversity in approach and decentralisation of research effort. Nevertheless, both reviews felt that in a climate where the overall level of resources for educational research needed to rise, at least some part of the additional funding should be allocated to key research centres.

The critical difference between those two reports was not in their analysis or in their recommendations, but in their reception: many of the VET research proposals were actually taken up and implemented. Through the efforts initially of the ANTA Research Advisory Committee, and later directly through ANTA itself, overall funding for VET research has risen and several key research centres have been established.

We are now able to apply an empirical test to the concept of key research centres: have they brought about a significant change in the quality, quantity and impact of VET research in their particular fields? I offer a personal response to this question through my experience with the Monash University-ACER Centre for the Economics of Education and Training (CEET). I reflect on the ways in which CEET's structure as a research centre enables a different way of doing VET research than if we were individual researchers loosely linked together. In my view the processes of concentration and focus lead to research of higher quality and greater impact. However, I leave others to judge whether that has actually eventuated.

A Centre generates more resources for VET research

CEET has four Directors and six Research Fellows on staff, and in all involves about six FTE people directly in its research program. All of these people are highly experienced researchers and policy analysts in education and training. Almost of these personnel resources are now directed to VET research, yet before CEET was established only about one-third of these people were working directly on VET research, and then only on a part-time basis. The Centre structure and funding has enabled skilled personnel resources to be diverted from other areas and focused on VET research.

One of the key ways in which this has happened is through the Centre's capacity to offer people longer-term employment contracts than if we were solely reliant on commissioned research contracts. Researchers with highly marketable skills are not going to be attracted to positions offering only six or twelve months tenure, as would otherwise be the case under current university employment conditions.

Having a core of staff supported through the Centre grant provides the capacity to respond quickly to requests for commissioned research and the provision of advice to VET authorities. CEET attracts as much funding for commissioned research as it receives through the Centre grant, and is involved in as much research again on a collaborative basis with other groups that are the direct recipient of commissioned research funding. The Centre grant has a substantial multiplier effect that lifts the overall quantity of resources devoted to research on the economics of VET.

The international networks that CEET has developed mean that it is not just Australian resources that get focused on VET research. The expertise of visiting researchers and international research centres also adds to the pool of findings and perspectives from which Australia can draw. It is doubtful that individual researchers, no matter how well connected, could match the visibility and networking capacity of a key research Centre.

A Centre has extensive interaction with the VET field

ANTA specifies that 25 per cent of the Centre grant is devoted to dissemination and interaction activities with VET policy makers and practitioners. CEET operates an extensive program of seminars, conferences and publications through which research findings are presented and emerging ideas are tested in the field. The CEET mailing list comprises around 700 individuals and organisations, and most of the CEET publications are provided at little or no cost. Some 5000 copies of The CEET Sheet, a two-page discussion of recent and forthcoming research, is sent three times a year to every TAFE institution and VET authority in Australia. Regular columns on CEET activities are maintained in Australian Training and the ACER Newsletter, and special contributions are prepared for other periodicals.

Equally important is the fact that CEET interacts extensively with the VET field in identifying research priorities and conducting research projects. CEET's VET Advisory Committee, which comprises representatives from ANTA, state training authorities, TAFE institutes, private providers, employers, and other VET researchers, plays a major role in shaping the CEET research program. The need for close interaction with the VET sector has also encouraged CEET to engage in collaborative research projects with VET providers and policy groups, and to recruit staff with extensive VET experience.

If CEET was solely dependent on commissioned research projects it is highly unlikely that this range of interaction and dissemination activities could be maintained.

A Centre engages in a different type of research

Centres generate not only a greater number of personnel resources and collaborative links for VET research, but also a greater mix of research expertise and backgrounds. The CEET staff comprises people experienced in different research paradigms and methodologies, and from different discipline and sectoral backgrounds. The diversity of staffing enables the building of research teams with complementary expertise.

Although CEET's focus is on the economics of education and training, the work benefits from involving people from discipline backgrounds other than economics. CEET's 1994 review of the field argued that it is simply not possible to consider questions of the level and distribution of costs and benefits through VET without detailed knowledge of the sector itself (Burke et al, 1994). This orientation required us to recruit staff with a wider range of discipline backgrounds and direct experience of the VET sector than would be typically available to, say, a university economics department.

The number and mix of staff that a Centre is able to recruit and train, and its extensive relationships with the VET sector, means that research ideas are constantly being challenged and debated for their rigour and their relevance. By contrast, individual researchers are likely to find it much more difficult to engage in such an interactive environment.

Having a core of researchers enables CEET to conduct longer-term, more complex projects than agencies are normally prepared to fund. The Centre structure also enables us to integrate findings from a wide range of sources in a way that is hopefully useful to those wanting access to state-of-the-art reviews.

Conclusion

Key research centres in priority areas are a recent development in the VET field, having started through ANTARAC in 1994. In CEET's case, support as a Key Centre has greatly accelerated development of a research field, the economics of VET, that had received little systematic attention in Australia before the early 1990s.

Some indication of the impact of research centres can be gained from the experiences of Australia's longest-established educational research centre, ACER. In 1996-97 ACER involved about 2 per cent of the person-years, and 4 per cent of the expenditure, allocated to education and training R&D in Australia (ABS, 1998). Most people would probably agree that ACER's work has a greater impact on educational policy and practice than this modest level of resources would imply.

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DIFFERENT MODES OF DELIVERY — STUDENT OUTCOMES AND STUDENTS' PERSPECTIVES

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ABSTRACT

This paper reports on a study of the effects of different modes of delivery. It bases its findings on an analysis of student outcomes from the national VET collection in six different discipline groupings and student responses to a questionnaire survey by 769 students from TAFE institutes in four states. It concludes that it is difficult to determine a direct relationship between modes of delivery and student outcomes. Also reported are students' evaluations of the effectiveness of the methods they have experienced and the problems they have encountered.

About the study

This paper discusses the findings of a study that investigated the effects of various modes of delivery of instruction. These findings are based on an analysis of the data on module outcomes from the national VET collection for the different modes of instruction across six discipline groupings and student responses to a student questionnaire survey. These data are held by the National Centre for Vocational Education Research. Because the survey gathered information from only those students who had successfully completed their studies it was considered important to access information also on those students who had not completed their studies. The data on student outcomes provided this.

Data on student outcomes were extracted for the seven AVETMISS (Australian Vocational Education and Training Module Information Statistical Standard) strategies (local class, remote class, self-paced scheduled, self-paced un-scheduled, external/correspondence, workplace experiential, mixed and other) in the discipline groupings of accounting, commercial cookery, computing, hospitality, civil engineering, and electrical engineering. A definition of each of these strategies appears in Appendix A.

Module outcomes in terms of Student assessed pass rates (SAPRs), Module Pass Rates (MPRs), Module Completion Rates (MCRs) were computed and analysed for all six discipline groupings. They were then grouped into bands of performance. Rates within discipline groupings which were within one, two or three percentage points of each other were placed into the same band.

The student questionnaire survey provided information on student age, level of education, distance from campus, learning preferences, ability levels and reasons for choosing a particular mode of delivery. It also provided information on students' with and evaluation of the delivery method via which they undertaken their studies. It was administered to on campus students during class or learning sessions and mailed to students studying via the external/correspondence method. Responses to the survey were analysed according to whether students had undergone training via traditional face-to-face delivery or flexible delivery. There were 769 students who responded to the survey. Just over half of the students had undergone training in a predominantly traditional face-to-face manner. The remainder had undertaken their studies mainly off campus or in a flexible on-campus situation. A basis for this distinction was provided by teachers of these students.

Part 1 - Module outcomes

NO ONE BEST STRATEGY

This analysis, has been unable to provide definitive answers as to which strategy needs to be put in place to best ensure consistent successes (in terms of student assessed pass rates, module pass rates and module completion rates) for all clients. These findings show that module pass rates for all but one of the strategies was generally high. In addition all strategies across all six disciplines were able to produce pass rates which were over 80% and all but one capable of producing pass rates over 90%. This means that it is difficult to determine which strategy will always provide the best outcomes for all students. However the external/correspondence delivery strategy consistently (although not always) produced MPRs and MCRs which were below those of other strategies. A breakdown of these data for delivery strategies and for discipline groupings appears in appendix B.

THE PERFORMANCE OF THE EXTERNAL/CORRESPONDENCE DELIVERY STRATEGY

The external/correspondence mode of delivery, although capable of producing module pass rates which were over 90% for one discipline grouping, consistently produced MPRs for other discipline groupings which were in some cases about half the rate of those produced by other strategies, and often well below the 50% mark. In addition the strategy also performed poorly in relation to other strategies when MPRs for different groups (males, females, part-time and full-time workers, and students of different age groups) were examined. A similar picture emerges for module completion rates. The external delivery strategy consistently produced completion rates which were generally below those produced by other strategies.

Why the external/correspondence delivery method performs so poorly in terms of module pass rates is in part explained by the substantial percentage of *withdrew-failed* outcomes included in the calculation of the MPR. In five out of the six discipline groupings about a third of the enrolments resulted in a *withdrew-failed* outcome. This is in contrast to the minimal numbers of such outcomes for most of the other delivery strategies. However the local class, and the self-paced scheduled delivery strategies also posted rates of withdrew-failed outcomes which, although only a fraction of those provided by the external/correspondence delivery strategy, were substantially higher than the remainder of the strategies.

When pass rates were computed by taking only student -assessed passes as a percentage of all assessments taken (including those in which students were assessed but had their results withheld) then a slightly different picture emerges. The external/correspondence strategy no longer produces very low rates as it does when a module pass rate is computed. Rather it operates similarly to other forms of delivery in that sometimes it finds itself in the top two bands and other times in the bottom two bands.

However the high rates of *withdrew-failed* outcomes that were associated with the external/correspondence mode of delivery continue to be a cause for concern. They alert us to some teaching, student learning and college administration issues that need to be considered.

THE RELATIONSHIP BETWEEN MODES OF DELIVERY AND OUTCOMES

Although it is easy to analyse and rank outcomes of different delivery strategies in terms of pass and completion rates, it is more difficult to determine whether in fact there is a direct relationship between the strategy and the outcomes that are produced. Many other variables need to be considered. The delivery strategy is the means by which instruction is delivered and received. As such its success in delivering pass rates or completion rates is strongly dependent on those who are delivering the training and assessment as well as on those who are receiving the training and undertaking the assessment. Students produce pass and completion rates by putting in the time and effort to learn and to prepare s for assessment. Teachers help students to produce pass rates by providing timely and appropriate support to students when they get into difficulties. This is why it is important to gather information on their experiences and evaluations of the method of training.

Part-2 Student evaluations

This part of the study investigated the responses to a questionnaire survey by students who had undertaken training delivered via flexible delivery or traditional delivery strategies.

ABOUT THE STUDENTS

Students in flexible delivery strategies tended to be older than students in traditional delivery strategies and more likely to be in full time work. Almost three-quarters of them lived between one and 15 kilometres from the campus. This was the case for just under half of the traditional delivery students. There were no major differences between the number of hours spent on their studies for the two groups with an average of between six and seven hours being allocated by both groups.

There were also no major differences between their educational backgrounds with more than three-quarters of students in both groups having completed year 12 and a substantial number of them had TAFE certificates. In addition an analysis of the self-ratings of flexible delivery and traditional delivery students on literacy, language, and problem -solving skills showed that there were no statistically significant differences between the two groups on any of the skill areas. There were few students in both groups who rated themselves in the *below average* ranges of ability on any dimension. However, when only the *well above average* ratings were examined flexible delivery students were found to be far more likely to rate themselves as *well above average* in all cases apart from mechanical skills. An examination of the *below average* ratings showed that traditional delivery students were more likely to consistently rate themselves as *below average* at a slightly higher rate than were flexible delivery students.

REASONS FOR CHOOSING METHOD OF DELIVERY

Flexible delivery students were more likely than traditional delivery students to indicate that their choice of method was lifestyle related. Traditional delivery students were more likely to indicate that they had chosen the method because it was the only method offered. Although the second most common reason for both groups was that the method was the most convenient this was the case for a substantially greater percentage of flexible delivery students than traditional delivery students. While almost a third of traditional delivery students chose the method because they felt it better helped them to understand the material, just under a fifth of the flexible delivery students gave this as a reason. There were no other major differences between the two groups. Very few students in both groups chose the method because it was less work, and about the same percentage chose it because it was an easier form of learning.

The reasons for students choosing to study via a particular delivery strategy may hold the key to understanding the differences in outcomes that are produced within the delivery methods. If flexible delivery students are selecting these methods because they suit their lifestyle and because they perceive them to be most convenient, then we can assume that their studies are not their first priority. This means that they may not choose to (or be able to put in the effort) to do the work required to understand concepts, complete necessary assignments, or prepare themselves sufficiently or adequately for assessments. In addition they may underestimate the time required for the completion or passing of the module. Their ability to pass or complete the modules then suffers as a result.

The study has found that external/correspondence students record the highest percentage of *withdrew failed* outcomes for all discipline groupings bar one. This provides one explanation for why the strategy tends to do so poorly in terms of module load pass rate. That is they do not fulfil the requirements of the course in time and then have to withdraw. However they also do not meet the deadline for withdrawal and so incur a fail. This provides one explanation for why the strategy tends to do so poorly in terms of module load pass rates.

There may be many reasons for students withdrawing from a course. However the reasons for them withdrawing from a course at a late date are not clear. One explanation could be that although they may commence the course with all the good intentions of putting in the time required to pass or complete it, these intentions may fall by the way-side as they try to fit in their other work and family commitments with study. These multiple commitments may lead to their running out of time to complete the assignments and prepare themselves for assessments. This lack of time and the frustration that may emanate from it, may then lead to a decision to withdraw from the course when it is too late to do so without penalty. If this is true for students who incur a *withdrew-failed* outcome then they may need to be made more fully aware of the problems associated with increased flexibility. Alternatively time management sessions should be included in the orientation workshops for all courses which are to be delivered in a flexible delivery format.

It may also be the case that students enrol in courses because they want the learning materials that accompany the course. That is they have no intention of completing the course. In addition they may also not be aware of the deadline for withdrawals from the course. Their reasons for enrolling in the course coupled with lack of information or awareness of the deadlines for withdrawals may then lead to a *withdrew-failed* outcome. If these explanations hold for substantial numbers of students who obtain a *withdrew-failed* outcome then a mechanism for identifying such students and dealing with them in a separate manner needs to be implemented at enrolment time.

LEARNING PREFERENCES

The findings of this part of the study also provide an insight into the learning preferences of both groups of students. Flexible delivery students were far more likely than traditional students to indicate that they learnt best when studying individually with texts and study guides to help them, doing their own research and interacting on-line with a computer. Traditional delivery students were more likely to say that they learnt best from a lecturer in a traditional classroom, practising doing things in practical workshop, working on a problem with other members in a group, and looking at pictures or diagrams which help explain concepts and processes. Students in both groups tended not to like learning by watching videos or listening to audio-tapes.

These findings show that students have generally chosen a delivery strategy that matches the way they prefer to learn. However when these findings are taken in conjunction with the information on student outcomes it seems that learning preferences may not have a strong bearing on students passing or completing a course. This is the case especially for external/correspondence students who in the majority of cases have the highest non-completion rates and the lowest module load pass rates.

If students are choosing to study via methods which accord with the way they prefer to learn, but are still not obtaining successful outcomes, then it may mean that more effort will need to put into the provision of induction activities. However given that flexible delivery students were more likely than others to indicate that they were provided with substantial induction activities, some changes to the induction may need to be implemented. These changes may include activities which are aimed to assist students to better understand the problems that may occur with the different delivery options. Alternatively these changes could comprise increasing the amount and quality of interaction between students and teacher and other students. Another solution would be to counsel those students who have very full working and social lives and who want to take external/correspondence courses to be wary of this particular method if they are not prepared to structure time into their lives to complete assignments and prepare for assessments. Time management sessions which give students tips on how to organise their time to meet their study goals could also be included in sessions for introductory workshops.

PREPARATION AND SUPPORT FOR LEARNING

This study has shown that flexible and traditional delivery students, generally valued the training they had undergone and believed that they had been provided with the assistance they required prior to commencing their studies as well as that required whilst completing their studies. This included the provision of study skills training, appropriate resources and equipment, teacher support, well planned and structured learning activities, and meaningful and appropriate assessment tasks. They were able to locate reference materials required for the preparation of assignments, and equipment required for the development of skills. In addition, the great majority had found it easy to follow study guides and texts, and access equipment and materials required for learning and developing skills.

This must be encouraging for teachers in the TAFE sector and especially for those providing studies in the specific modules considered in this study. It suggests that providers are taking the time to ensure that students are well prepared to commence their studies and have available to them the facilities and resources and support required to complete them.

PROBLEMS AND CONCERN

The most common problems for flexible delivery students were making enough time to study and fitting in family obligations with study. For traditional delivery students they were completing assignments to deadlines, finding enough time to study, and following instructions for practical sessions. Few students in both groups found it difficult to access material or equipment required for their learning or to follow texts and study guides.

These findings show that students are generally not choosing to identify as problems factors which might be directly related to the delivery strategy itself. Rather they are looking at their own shortcomings in meeting course requirements. They are citing organisational difficulties like fitting in study time with their other commitments and making enough time to study. By their responses students have supported the thesis that delivery strategies on their own do not produce successful outcomes. That is, there are many other considerations that need to be taken into account when evaluating the effects of these different modes.

PERCEIVED ADVANTAGES OF THE DELIVERY METHODS

When students reported the advantages of the particular method of delivery they had experienced in their course, flexible delivery students cited advantages which related to the flexibility that the method provided. That is, the flexibility it allowed them to self-pace their study program and the opportunity it gave them to fit in study times with work and family obligations Frequently reported was the support that they had received by teachers and tutors. For traditional delivery students the most frequently cited advantages related to personal contact with others. This included face-to-face contact with teachers and students, and the support received from teachers .

Where almost half of the traditional students cited improvements in knowledge and skill as a consequence of the delivery method, just over a tenth of the flexible delivery students reported these as advantages. However flexible delivery students were more likely than traditional students to cite advantages in terms of cost and time efficiencies.

These findings provide further insight into the reasons for students choosing to study via different methods of delivery. They show that the priority for flexible delivery students is to be able to juggle studies with other activities, while the priority for traditional delivery students is to be able to study via a method which allows them to have more personal contact with teachers. This could mean that for flexible delivery students their studies may not be a high priority. They may however be an important priority for those who have decided to choose a delivery strategy that requires them to put aside time to attend classes.

PERCEIVED DISADVANTAGES OF THE DELIVERY METHOD

When students were asked to report any disadvantages they had experienced with the method of delivery used in their course, the most common disadvantage, identified by just under half of the responding flexible delivery students, related to interaction with others. They reported the lack of instant access to teachers when they were experiencing difficulties, and the lack of general interaction with other students and teachers. The second most frequently cited disadvantage had to do with personal issues such as the self-discipline required to get things done and the self-consciousness experienced by students in video-conferencing situations. For traditional students the most common disadvantage, identified by well over a third of the students, related to time pressures. Of these the most frequent was the lack of adequate time in the course to get things done.

Traditional delivery students were also slightly more likely to identify ineffective teaching processes as a disadvantage than were flexible delivery students. Flexible delivery students were more likely to identify difficulties in understanding materials than were traditional students. They were also more likely to talk about problems in accessing equipment after hours and up-to-date materials and equipment. This was particularly the case with those students dependent on the availability of computers and the smooth operation of inter-net facilities.

The disadvantages reported by students in both groups emphasise the importance of interacting with teachers and other students during the learning. Where flexible delivery students were concerned that they had little or no such interaction, traditional delivery students complained about the nature of their interaction.

This may explain in part why external/correspondence delivery students do so poorly in terms of module load pass rates and module load completion rates. Their frustrations at not being able to access teachers and other students especially when they are having difficulties may reduce their motivation for putting in the time to get work completed. Alternatively they may put off calling teachers for assistance until it is too late, and then give up when things appear too hard or overwhelming. A combination of all these influences may then cause their withdrawal from classes and consequently their failure to complete the course.

Although it would be difficult to ensure instant access to teachers when students are having difficulties whether they be external/correspondence or on-campus students, there are other mechanisms that can be put in place to address student frustration with lack of interaction. Workshops, which bring students and teachers together prior to the commencement and during the course, could be organised. This would have three major advantages. It would allow students to meet with other students to discuss similar problems. It will also allow students to get to know teachers so that they do not feel self-conscious about getting in touch with them when they are experiencing problems. Such workshops may have a residential component for students in rural areas or students who live in other states.

PERCEIVED EFFECTIVENESS - STUDENT EVALUATIONS

Students were positive in their evaluations of the extent to which the method they had undergone had suited the content of the module and had been able to assist them to understand subject material, practise skills and complete course requirements. This provides us with a measure of students' perceptions of the effectiveness of the delivery strategy. Because there were no major differences between the two groups in how they evaluated the effectiveness of the strategy on these dimensions we are not able to say on the basis of this data that either method was better than the other.

However, flexible delivery students were far less likely to say that the method allowed them to have ready access to instructors than were traditional students. Although not unusual, this finding provides us with information to compare the two groups. Ready access to instructors at the time of learning is one of the central differentiating factors between flexible and traditional delivery methods. It is what flexible delivery students trade off for the flexibility which comes with the freedom to choose when to study, where to study, what to study and how to study. It is important then to make them aware of the problems that can eventuate from these choices.

STUDENT SATISFACTION WITH THE MODE OF DELIVERY

Flexible delivery students were more likely than traditional students to say that they looked forward to their study sessions, preparing for assignments and doing assessments. In addition they were also more likely to say that they would recommend this method of learning to other students. However older students in both groups appeared to look forward to study sessions to a greater extent than younger students.

Why flexible students should feel more satisfied with their method of delivery than traditional students may in part be explained by the increased role they had in choosing the method of delivery. Another may be that they have increased autonomy in the way they interact with the subject material, the pace at which they wish to progress, and their choice of study times and places. These may combine to make the learning experience a far more enjoyable one and contribute to their positive evaluations of the method and their own satisfaction with it.

However it is evident that this sense of enjoyment or satisfaction may not lead to better outcomes. One explanation for this contradiction may be that the flexibility which attracted students to a flexible method in the first place, may in fact be what hinders them in their accomplishment of goals. Flexibility in deciding when, where, how and what to study may in fact not be the best option for already busy people. It may be that busy people who want to pass and complete their studies require structure - that is a timetable for regular and predetermined periods for study. This is not to say that busy people who are prepared and are motivated to put in the time required to complete their studies should not take advantage of increased flexibility. What needs to be pointed out to all intending flexible delivery students is that absolute flexibility may not be the answer to successful outcomes for those who have busy lives. If this is the case for them then they might do well to choose a delivery strategy that affords some flexibility, but encompasses some structured time for learning.

Conclusions

This study has shown that it is difficult to determine a direct relationship between student outcomes and the delivery strategy. However it has highlighted the low completion and high *withdrew-failed* rates of the external/correspondence delivery method. Information from the student survey has provided us with some possible explanations for why students may find difficulty with completing work or passing assessments. It has highlighted the advantages of flexible and traditional strategies and the problems that can occur when things go wrong.

What it has shown is that certain learning principles should guide the structure of the learning activity whatever the delivery method. These include clear instructions, opportunity to discuss problems or issues with teachers and peers, timely feedback and enough time to practice skills and meet requirements.

APPENDIX A

AVETMISS mode of delivery categories

Category 01 – Local class

This category relates to classes held on a common campus in a local classroom situation. Students attend classes at scheduled times and are presented with subject material by a lecturer. The local organisation permits extensive interaction between lecturer and students.

Category 02 – Remote class

This category differs from local class organisation only in that the students are located in one or more remote sites, connected by some form of communications system (such as video conferencing or teleconferencing). The strategy is generally used to extend the classroom to students for whom attendance at the main site is not practical. Interaction between lecturer and students is dependent on the technology employed.

Category 03 – self-paced –scheduled

This category relates to self-paced learning. This refers to scheduled class organisation in which the learning is directed through self paced materials with assistance available from a tutor. Students attend classes at scheduled times and progress at their own pace using print-based or computer-oriented materials. Typically, assessment is on demand and is often competency-based.

Category 04 – self-paced – un-scheduled

This category relates to a form of self-paced learning in which the students has a variety of learning options. Attendance on campus is usually required only for guidance and progress monitoring, though there are typically substantial resource materials available on campus for students. Learning resources are essentially the same as those available under conventional self-paced learning. The term open learning is often associated with this delivery strategy.

Category 05 – external/correspondence

This category relates to distance learning. It includes standard correspondence learning in which the students receive materials and assignments by post. Learning is directed by structured learning materials and is effectively self-paced. Communication between tutors and students is primarily in printed form via the mail system.

Category 06 – workplace/experiential

This category relates to experiential learning and on-the-job learning. It will generally incorporate some degree of informal instruction as well as workplace experience.

Category 07 – mixed delivery

This category relates to situations where more than one delivery strategy is used to deliver substantial components of a single module. For example, if a module offering combines local class delivery and regular workplace experience to present essential material to the client, then it should be classified as mixed delivery.

Category 90- other delivery strategies

This category includes any category which is not described in the first seven categories above. It should not be applied if any of the categories 01 - 07 offers a reasonable description of the main form of delivery strategy in use.

APPENDIX B

Student outcomes

The following AVETMISS outcomes have been used in the calculation of various rates module pass rate (MPR), student assessed pass rate (SAPR), and module load completion rate (MCR).

Students assessed - passed (01)
Students assessed failed = (02)
Student assessed - results withheld = (03)
No assessment – satisfactory completion of class hours = (04)
No assessment – studies not yet completed (05)
Status (or credit) granted through recognition of prior learning (06)
Status (or credit granted) through credit transfer arrangements (09)
Withdrew without failure (10)
Withdrew – failed (11)

Withdrew - transferred (12)
Not stated (90)
Unknown

Formula for Module Pass Rate: MPR= 01 / (01+12+O11) X 100

Module Pass rates by delivery strategy and discipline grouping

Delivery Strategy	Accounting	Commercial Cookery	Computing	Hospitality	Civil Engineering	Electrical Engineering
Remote	98.0	90.2	92.3	94.1	100.0	84.4
Workplace/experiential	91.0	89.3	97.3	96.0	92.3	87.7
Mixed	90.4	81.1	92.6	89.3	99.1	92.8
Other	89.1	91.9	91.8	90.9	85.7	97.3
Self-paced scheduled	88.2	95.5	83.7	91.8	87.5	74.8
Self-paced un scheduled	85.3	97.5	88.3	100	96.6	93.3
Local	80.1	87.2	84.2	85.6	82.4	79.1
External/correspondence	43.7	90.1	44.2	54.1	40.5	47.5

Formula for Student Assessed Pass Rate: (SAPR) = 01 / 01 + 02 + 03 X 100

Module assessments by pass outcomes for all delivery strategies

	Accounting	Commercial Cookery	Computing	Hospitality	Civil Engineering	Electrical Engineering
	Pass rate %	Pass rate %	Pass rate %	Pass rate %	Pass rate %	Pass rate %
Local class (Face to face)	85.4	90.5	89.5	87.7	86.3	84.2
Remote Class	99	88.3	78.4	82.7	100	83.9
Self-paced (scheduled)	84.2	92.3	88.6	86.4	92.2	80.8
Self-paced (unscheduled)	86.6	*97.5	75.9	84.1	91.8	100
External/Correspondence	81.0	80.1	91.1	89	97	84.7
Workplace/Experiential	99.5	91	98.8	93.5	*92.3	86.2
Mixed	92.9	78.2	94.8	92.1	99.1	81.5
Other	78.7	81.9	84.7	84.2	42.1	94.5

* Denotes assessment numbers less than 50. Caution should be taken in interpreting these figures.

Formula for module completion rate: MCR = 01 + 04 / (01 + 02 +03 + 04 + 10 + 11 + 12) X 100

Module completion rates according to discipline groupings and delivery strategy

	Discipline groupings					
Delivery Strategies	Accounting	Cookery	Computing	Hospitality	Civil Eng	Elec Eng
Remote class	92.5	81.6	82.0	81.3	100.0	78.2
Workplace/experiential	88.4	72.6	94.1	85.2	85.7	84.7
Local	80.1	82.1	78.9	80.9	78.9	74.4
Other	79.0	78.3	82.9	80.1	85.7	93.4
Mixed	78.7	67.8	87.4	76.9	95.3	91.8
Self-paced scheduled	77.9	90.2	79.5	82.5	86.1	71.3
External/correspondence	41.4	75.8	43.5*	51.2	40.2	46.4
Self-paced un-scheduled	6.0	100	66.9	78.8	88.9	86.8

* Denotes enrolment numbers less than 50. Caution should be taken in interpreting these figures.

WORKING ON CURRICULUM RECOMMENDATIONS FOR WOMEN LEADERS AND MANAGERS, 2010

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ABSTRACT

In 1995, a consortium comprising a number of TAFE Colleges and university representatives was funded by ANTA to investigate recommendations for curriculum, to prepare women leaders and managers for the twenty-first century. The investigation had had its beginnings in early 1994. Based upon the earlier enquiry, the 1995 project investigated social, political and economic perspectives of the topic. A broad set of recommendations was developed. The next generation of the project is to focus on various components within the recommendations and decide upon viable audiences and products for 1999.

The consortium model created spin offs into linked areas of activity, for example two WA TAFE Colleges won funding to investigate leadership programs for people represented within diverse groups. Another link was created with a longitudinal study about gender inclusively and organisational culture, involving two WA TAFE Colleges with the four WA public universities.

In terms of describing a model to represent activities linked with the investigations, it appears to be an evolutionary process, with replications which have links back to the early discussions and theories but with changes created through new information gains. The ideas of Margaret Wheatley are brought to mind to describe what is happening.

Background to the ANTARAC investigation

The investigation had had its beginnings in 1994 when South Metro TAFE, WA was funded with a WA Department of Training small research grant to develop a Leadership and Management Program for Women staff. Midland TAFE, WA staff were invited to join in the six sessions conducted. Facilitation of these sessions was provided by a private sector staff training organisation. The two investigators identified features of the program which they believed should be addressed in any further activity in the area. These were that numbers of the 16 participants in the program had in mind very small goals, for example, achieving a promotion to the next level in the organisation. The participants demonstrated very little facility with or interest in the finances of their organisation. A third observation was that there was a need to enhance strategic networking for results in the organisation and to identify opportunities outside the organisation to make things happen in their workplace or for them as individuals. One further observation related to beliefs about leaders being without flaw. The problem of this view was that it effectively wrote the women, perhaps conveniently, out of a leadership script and was an unreasonable or unrealistic perspective for them to apply to others.

The following year, in early 1995, a second round of training was funded through a WA Department of Training special grant for activities relating to female staff. On this occasion 25 women participated in all or some of the two hour sessions which were conducted in the middle of the working day. Networking for results, money in organisations and organisational politics were the topics covered. These sessions proved very successful and informative. The presenter provided a very effective mix of women's culture and strategic thinking.

In early 1995, the Commonwealth of Australia released Enterprise Nation: renewing Australia's managers to meet the challenges of the Asia-Pacific century. Commonly referred to as the Karpin Report, named after David Karpin the private sector Chairperson for the steering committee, the report comprised 27 separate documents and made a range of recommendations on skills acquisitions for Australia's leaders and managers to prepare them for a global business environment. Much of the forecasting was through to the Year 2010. In seeking funding to identify skills to prepare women as leaders and managers, a similar timeframe was adopted by South Metro TAFE. Jacquie Hutchinson from Edith Cowan University had been instrumental in establishing a Women's Leadership Program at Edith Cowan University and extending it into the education sector and the business community. She played a key role in identifying the Karpin Report as a significant platform from which to launch the next phase of the investigation.

Problematising the Karpin Report

There was a range of speculative questions which a reading of the Karpin Report triggered. for example, what might happen to the integrity of local indigenous cultures in a global trading environment; would there be middle management positions to provide vital transition experience from supervision/frontline manager level in an enterprise to senior levels of management; what would downsizing of the workforce mean for women seeking employment and for women seeking senior roles in organisations? Where would migrant women and women from culturally diverse backgrounds sit in the picture - would they be advantaged or disadvantaged by global trends - would different categories of women experience the work environment in different ways? To what extent would women who occupied senior positions in international business environments have opportunities for family roles? Would there be some industry categories were women might be more successful than others? Would a scan of the literature relating to the future provide similar predictions to those on which Karpin Report recommendations were based?

Texts and Contexts

From the questions raised by the Karpin Report, it seemed that a project steering group which offered a range of perspectives could provide expertise in different ways. to that end, a steering group was identified which reflected:

1. the history of earlier aspects of the investigations
2. different kinds of expertise
3. a number of geographic sites, to assist with data collection if necessary
4. some formal academic rigour to ensure the processes and report would be acceptable and
5. representatives from public and private sector enterprises

As well, it was likely the investigation would encroach upon a number of subject disciplines and would therefore require a theory and model which could accommodate a multi-disciplinary approach. One element of the investigation was likely to include an investigation of women's views on occupying positions of influence. The rationale for this was that these women could be in a position to add their wisdom to the advice being offered through published works. As well, the steering group considered a survey would provide a useful window into the lived experience of these women at a particular point in time, namely 1996-97.

Structure of the Investigation

The project was formulated from two underlying concerns, issues which surrounded the Karpin Report recommendations and matters relating to women occupying positions of influence. the two strands of the investigation were developed in the following ways.

A literature search was conducted on areas raised by the Karpin Report, for example, predictions on social, political, economic, personal and global impacts. These were assembled as international considerations and matters relating to Australia and its citizens. The second area of enquiry was three pronged. One element of the investigation related to identifying existing curriculum and texts, both hard copy and on-line, addressing leadership and management skills acquisition. A second element was of research literature which discussed relationships between women and power, and a third element comprised a survey of women leaders and mangers.

Within the survey activity 90 women's views were canvassed. In all, more than thirty matters raised through the earlier literature search on women and power and from the curriculum investigation warranted clarification. the survey group was therefore divided and two sets of questions were developed and applied to two subgroups. Women in and outside Australia were included. There were indigenous women and women from culturally diverse backgrounds. Public sector organisations and private sector employees were included. some women did not attract income from their leadership roles. Most industry groups were represented however women tended to cluster in particular industry sectors.

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LONGITUDINAL STUDY OF OUTCOMES OF VOCATIONAL EDUCATION AND TRAINING PROGRAMS

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The views and opinions expressed in this document are those of the author/project team and do not necessarily reflect the views of the South Australian Department of Education, Training and Employment (SA DETE).

ABSTRACT

This report represents the findings of the first phase of the longitudinal study of outcomes of VET programs. During the first phase of this study, TAFE 'graduates' were asked to provide information about themselves, their TAFE course, their past and current employment experience and the relevance of TAFE studies to their employment. This paper reports on the findings collected from 562 'graduates' at six different TAFE Institutes in South Australia.

The future of vocational education students after completing their education and training has always been of interest to Technical and Further Education (TAFE) Institutes. By gaining an in-depth picture of the lives of these graduates, it is possible to evaluate the effectiveness of courses in assisting graduates to meet their VET objectives for choosing to study at TAFE SA. In addition, the information provided by these graduates also enables TAFE SA to re-assess the structure of its courses, so that they are more relevant to industry needs and especially, the needs of their students.

Background

This longitudinal study of outcomes of Vocational Education and Training (VET) programs continues the series of studies of VET graduates commenced by the National Centre for Vocational Education Research (NCVER). In particular, this study is the sequel to *Issues regarding higher education graduates in vocational education and training* (Werner, 1998), which was in turn the continuation of *Destinations and career pathways of enrollees from selected South Australian TAFE VET programs, 1990-1994* (Werner, 1998). This longitudinal study, designed to track VET graduates at six months and two years after the completion of their training courses, was developed from a suggestion by the South Australian Department of Education, Training and Employment (SA DETE).

It is important to take into account the existence of other ongoing research into the destinations of VET graduates to ensure that the information collected from this longitudinal study does not duplicate other studies. There are a number of studies on vocational education graduates including the *Longitudinal Survey of Australian Youths* and the *Graduate Destination Survey*. The *Longitudinal Survey of Australian Youths* (*LSAY*) currently conducted by the Australian Council for Education Research (ACER) replaces both the *Youth in transition study* previously carried out by ACER and the Department of Education, Training and Youth Affairs (DETYA) *Australian Youth Survey*. The LSAY picks up waves of 10,000 year 9 students every three years, and follows them for a decade or so. As a result, this study collects information about VET participants as an incidental part of a larger research agenda. In particular, the study gathers valuable information about participation of young people in vocational education and training. Although the information collected from the LSAY provides national trends on participation of young people in VET, the information collected does not provide extensive data on young people from TAFE SA.

The *Graduate Destination Survey* (*CDS*) recently conducted by the NCVER on behalf of the Australian National Training Authority (ANTA) provided information only about graduates from award courses immediately after they have graduated. Although the data collected from cross-sectional studies such as the GDS provide valuable background information about VET graduates for training providers and Government agencies, they cannot provide in-depth information on what actually happens to individuals over time. To establish more clearly the order in which events actually occur, a longitudinal study is needed. Information collected from longitudinal studies allows a stronger inference of causal relationship and also an evaluation of longer-term outcomes.

Current studies researching the destinations of VET graduates provide valuable information about participation of young people in VET as well as information about immediate VET graduates from award courses. While these studies provide national trends about VET graduates, the data collected are not at a level of detail that is desirable for the vocational education system in South Australia. The primary focus of this longitudinal study is therefore, to provide information which address the specific needs for the VET sector in South Australia.

Aims

The primary purpose of this project is to develop a longitudinal study of individuals emerging from training courses and employment programs within TAFE SA. These individuals are to be followed at six months and then over one year after completion of VET courses to determine the outcomes of VET programs. As a secondary goal, the project is to develop a cadre of institute staff capable of initiating and managing longitudinal and other studies of institute clients.

Methodology

While graduates from award courses will be one focus of the study, other individuals who have completed a program, which involves only part of a course (but which meets their immediate or long term needs or the needs of their employer) will also be included.

During 1997 the main focus of the project was to establish the ground rules for the study and identify TAFE SA participants. In 1998, the development of the questionnaire and recruiting of 1997 graduates was carried out with participants from TAFE SA and NCVER staff.

The study is made up of seven major phases, namely:

1. Invitation to participate in the study

In July 1997, invitations to participate in the longitudinal study were issued to TAFE Institutes. During this stage, two participants with an appropriate level of computer expertise as well as personal and institutional commitment were identified from each institute.

2. Outlining the scope of the study

A two-day information workshop for staff participants from TAFE Institutes was held at the NCVER. During the workshop, participants were provided with information on the requirements of the project. This was followed by discussion about the scope of the project and the identification of the appropriate target populations for the project.

Participants were asked to identify courses from which 'graduates' will be selected for inclusion. It was decided that for a course to be included in the study, it would be expected to 'graduate' 30 or so individuals. It was decided that each institute would be asked to provide up to 300 'graduates'.

3. Development of questionnaire

Staff from the NCVER and participants from TAFE Institutes came together to develop the research questions that would guide the identification of items for the questionnaire. The questionnaires were trialled with 20 students from one of the TAFE

Institutes involved in the study. Modifications based on student feedback from the trial were made to the questionnaire.

4. Recruitment of students

The recruitment of students was also undertaken in collaboration with Institute staff. This required the development of a registration form, which informed 'graduates' about the purpose of the study and asked them to register their interest to participate in this longitudinal study. 'Graduates' were recruited in three major ways:

Participants from some Institutes recruited 'graduates' in the research program by meeting them briefly during class and explained to them the purpose of the study.

Registration forms were distributed at graduation ceremonies at selected campuses of the Institutes involved.

Lists of names of graduates were provided to NCVER by a number of Institutes and registration forms were sent out to these 'graduates'.

5. Distribution of the questionnaire

Once registration forms were received, a database of registrations was developed. This set of registrations became the survey sample. Questionnaires were then sent to these 'graduates' and a follow-up reminder letter was also required to help increase the response rate.

6. Collation and analysis of data

Once completed questionnaires were received at NCVER, the coding of open-ended questions took place. Staff from NCVER developed the program for data entry. Data was then analysed using the Simstat for Windows statistical program.

7. Writing of report

A three-day workshop involving practical demonstrations and training in data analysis and report writing was held at the NCVER. Participants were distributed with data, pertaining to their own institute, for analysis. They were also provided with a preliminary pro-forma for reporting the results of the study. This was to be used to assist them with their own-specific reports. A report describing the findings for the total group of respondents was prepared by NCVER.

Results

A total of 881 questionnaires were sent out to those 'graduates' who registered to participate in the longitudinal study. By the end of September 1998, 562 completed questionnaires were received. This represented a response rate of 63.8% of the total group.

Respondents

A greater percentage of females (59.7%) than males (40.3%) responded to the study. Respondents had an average age of 31 (sd = 10.4). Fifty percent were over the age of 19. Respondents came from diverse backgrounds. The majority had completed year 12 or overseas equivalent (N=304, 54.9%) as their highest secondary school level, and more than half had completed some post-secondary qualifications or trade certificates before commencing their TAFE course (N=364, 64.8%).

Motivation for undertaking TAFE course.

Respondents reported many reasons for choosing to study at TAFE rather than at another educational institution or provider. The three most frequently identified reasons reported by respondents were:

- to gain extra skills (N=347, 61.7%)
- to gain employment (N=267, 47.5%)
- for personal development (N=239, 42.5%).

Most respondents in the 15 to 25 age group indicated that they had chosen to study at TAFE SA because it helped them to gain employment and extra skills. Many in this age group also indicated that they chose to study at TAFE because they believed that it would help them make their career choice. Some of these respondents also indicated that their jobs required them to study at TAFE. Respondents in the 25 to 60 age range indicated that they had chosen to study at TAFE to gain extra skills. Many had also chosen to study at TAFE for personal and career development reasons. The data are presented in table 1 below.

Table 1: Reasons for choosing to study at TAFE by age.

	Age 15-19	Age 20-24	Age 25-34	Age 35-44	Age 45-54	Age 55-60	Total
Unable to gain entry to University	1.7	5.5	2.8	0.7	1.9	0.0	2.6
Gain employment	26.0	21.0	11.5	10.5	13.5	9.1	15.0
A requirement of job	11.0	13.6	2.4	4.1	3.4	13.6	6.3
Gain extra skills	18.5	16.3	19.5	22.8	18.7	22.7	19.5
Update knowledge	5.2	5.5	10.5	14.8	12.0	13.6	10.3
Career change	2.9	3.7	12.9	12.8	12.0	0.0	9.6
Get into another course	3.5	3.7	2.8	1.6	1.5	4.5	2.6
Personal development	6.4	7.6	14.3	17.4	17.6	18.2	13.4
Interest/Recreation	5.8	6.3	6.0	4.1	4.9	4.5	5.4
Help make career choice	12.1	11.0	7.8	5.0	6.7	4.5	8.0
Gain promotion	0.6	1.8	9.1	5.0	6.0	4.5	5.2
Required by Government agency	0.6	1.0	0.4	0.5	0.4	0.0	0.6
Other	5.8	2.9	0.0	0.7	1.5	4.5	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Respondents were also asked to indicate reasons for choosing their course rather than any other TAFE courses. The three most frequently identified reasons were:

- to access employment prospects (N=257, 45.7%)
- to build on existing skills (N=202, 35.9%)
- to develop personal interests (N=194, 34.5%).

Employment background

Respondents were asked to provide detailed information on their involvement in paid work. Of the total number of respondents (554) who reported their employment background, there were only 25 (4.5%) respondents who indicated that they had never had paid work (this also included self-employment). Respondents' employment status prior to, during, and after their 1997 course is shown in table 2.

Prior to commencing TAFE course

Over two-thirds of respondents reported that they already had paid work twelve months prior to commencing their 1997 course. More than fifty percent of these respondents were working 35 hours or less, and more than three-quarters earned a maximum amount of $500 a week.

While undertaking TAFE course

Slightly fewer respondents indicated being involved in paid work during their TAFE course. Just over half of these respondents were working in casual or part-time jobs with over three-quarters reporting earning $500 or less each week.

Six months after completion of the course

There was an increase in the number of those involved in paid work. In addition, most of the paid work was more than 35 hours each week. The gross weekly income reported by respondents also increased as there was a larger proportion earning between $501 and $1000. A small proportion of respondents was also earning more than $1000 each week.

Table 2: A comparison of respondents' employment status - prior to, during and after their course.

	12 months prior to course		During course (in 1997)		Six months after completion of course (June 1998)	
	No. of respondents	%	No. of respondents	%	No. of respondents	%
Employment status						
Full-time	183	45.3	169	47.6	257	58.5
Part-time	64	15.8	60	16.9	70	15.9
Casual	128	31.7	126	35.5	112	25.5
Unknown	29	7.2	0	0	0	0
Sub-total	404	100.0	355	100.0	439	100.0
Number of hours worked						
1-15 hours	104	25.7	106	29.9	69	15.7
16-35 hours	109	27.0	93	26.2	116	26.4
36 or more hours	176	43.6	141	39.7	241	54.9
Unknown	15	3.7	15	4.2	13	3.0
Sub-total	404	100.0	355	100.0	439	100.0
Gross weekly income						
$1-$200	133	32.9	119	33.5	90	20.5
$201-$350	105	26.0	98	27.6	106	24.1
$351-$500	94	23.3	64	18.0	121	27.6
$501-$1000	68	16.8	65	18.3	101	23.0
$1000 or more	4	1.0	3	0.8	13	3.0
Unknown	0	0	6	1.7	8	1.8
Sub-total	404	100.0	355	100.0	439	100.0

Of those respondents who were in paid work at six months after completion of their TAFE course, approximately three-quarters (N=332, 75.6%) indicated that their paid work was related to their TAFE course. Furthermore, almost all (N=424, 96.6%) reported that the course was very useful or of some use to their paid work. Respondents reported many factors that assisted them to get their paid work. Some of these factors included the increased skills gained from their TAFE course (N=112, 28.0%), work experience undertaken (N=86, 21.5%) and TAFE qualifications obtained (N=64, 16.0%).

In June 1998, there were 123 respondents who were identified as not being in paid work. Of these respondents, there were 25 who did not report their activities since completing TAFE course. Of those who did report their activities, nearly half (N=45, 45.9%) indicated that they were seeking paid work. Almost a third of respondents reported that they were not seeking paid work because of their involvement in full-time study (N=30, 30.6%). In addition, a small number of respondents (N=23, 23.5%) reported that they were not seeking paid work because of their other commitments.

Evaluation of TAFE course

Effectiveness of course in preparing individuals for getting a job

Respondents who started a new job six months after completion of their course (N=279, 63.6%) were asked to rate how well the course had prepared them to get paid work. Approximately, forty percent of respondents thought that their course had prepared them to get a job. The course had more than adequately prepared them to get a job by providing them with opportunities for:

- work experience
- contact with employers
- resume writing activities
- writing job applications
- improving interview techniques

In addition, a quarter of respondents rated these course activities as being merely adequate in helping them to get a job. However, more than 32 percent of respondents thought that these course activities had not been very effective in helping them to get paid work. Respondents were then asked to suggest ways in which the course could have prepared them to be better prepared to find or start work. Suggestions were given by a very small number of respondents, namely:

- work experience
- practice with interview techniques
- liaison with employers.

Effectiveness of course in preparing individuals for the workplace

Those respondents who started a new job six months after completion of their course were also asked to rate how well the course had prepared them for the workplace. The majority thought that they were either well or adequately prepared for the workplace, in terms of working with others; awareness of occupational health and safety requirements and dealing with customers. A substantial number of respondents also believed that the course had not adequately prepared them for the level of wages they were to receive and the length of hours they were expected to work. Respondents' evaluation of the effectiveness of the course in preparing them for the workplace is shown in table 3.

Table 3: Respondents' evaluation of the effectiveness of the course in preparing them for the workplace

	Very Well %	Well %	Adequately %	Poorly %	Not at all %	Total %	No. of respondents
Health and safety on the job	33.0	32.3	24.4	2.9	7.5	100.0	279
Punctuality	31.8	27.7	24.5	2.9	13.1	100.0	274
Appropriate dress requirements	29.7	31.5	22.8	3.3	12.7	100.0	276
Length of working hours	19.9	29.7	32.2	4.0	14.1	100.0	276
Level of wages	13.4	26.4	31.4	10.1	18.8	100.0	277
Dealing with customers	30.2	28.4	25.5	5.1	10.9	100.0	275
Working with other people	39.6	33.5	21.2	2.2	3.6	100.0	278
Equal opportunity issues	27.9	33.0	23.9	4.3	10.9	100.0	276

Effectiveness of course in developing Key Competencies

Key competencies have been identified as the foundation for a more effective workplace. They include the ability to work effectively as a team and with others, communicating ideas and information, problem solving, mathematics and activity management. Just over two-thirds of respondents reported a gain in their ability to use all key competencies except for the ability to use mathematical ideas and techniques. Less than fifty percent of respondents indicated that there was a gain in their ability to use this skill. The ability to use mathematical ideas and techniques remained unchanged for a high proportion of respondents (Table 4).

Table 4: Changes in ability to use key competencies reported by respondents (%).

	Major loss	Slight loss	No change	Slight gain	Significant gain	Total	No. of respondents
Collecting, analysing & organising information	3.3	4.0	24.0	38.4	30.2	100.0	549
Solving problems	3.0	4.2	21.4	28.2	43.2	100.0	542
Using technology	3.5	3.9	24.3	35.3	33.1	100.0	544
Using mathematical ideas & techniques	2.0	4.6	45.7	13.6	34.1	100.0	543
Working with others & in teams	5.3	2.7	25.0	34.7	32.2	100.0	547
Communicating ideas & information	4.2	3.5	17.5	40.3	34.5	100.0	548
Planning & organising activities	4.0	3.1	23.6	41.3	28.0	100.0	547

Less than a tenth of respondents also reported deterioration in their abilities to use some of these key competencies. Not all of these respondents gave comments for the loss of skills. Of those who did, the most frequently identified reason given was the lack of opportunity to utilise their skills.

Evaluating TAFE SA

Respondents were then asked to evaluate TAFE's services and training programs. Respondents predominantly agreed that TAFE was good value for money. TAFE assisted students to build on work and life skills and increase their earning potential. The majority of the respondents also agreed that TAFE provided students with the appropriate environment to return to study and to achieve their potential (Table 5).

Table 5: Respondents evaluations of TAFE (%)

	Strongly agree	Slightly agree	Neutral	Slightly disagree	Strongly disagree	No. of respondents	No. of respondents
TAFE assists students to build skills for life	47.1	36.8	13.4	1.8	9.0	100.0	554
Going to TAFE increases job opportunities	54.0	33.9	7.9	2.5	1.6	100.0	554
Completing a TAFE course increases earning potential	36.2	39.1	17.6	4.7	2.4	100.0	550
TAFE courses provide a good start to University	36.5	28.4	30.9	3.3	0.9	100.0	550
TAFE assist students to build appropriate skills for work	50.5	39.4	7.4	2.0	0.7	100.0	554
TAFE provides the environment to achieve your potential	35.9	42.6	15.4	4.2	1.8	100.0	551
TAFE courses provide value for money	42.3	34.4	17.5	3.6	2.2	100.0	549
TAFE is a good re-introduction to study	57.1	29.7	11.1	1.6	0.5	100.0	552

Discussion

'An opportunity to access employment' was thought to be the most important reason for choosing to study at TAFE by many respondents in the 15 to 24 age group. This was followed by 'a chance to gain extra skills'. Many also indicated that an opportunity to help them make their career choice was also important. Most respondents in the 25 to 60 age group also regarded the gaining of extra skills as an important factor in their choosing to study at TAFE. Many also indicated that they chose to study at TAFE because they wanted to change their career, to up-date their knowledge and to obtain personal development. Young people had different intentions for choosing to study at TAFE. They were more inclined to study at TAFE because they believed that TAFE would assist them in finding employment and in making career choices. Responses given by those in the 25 to 60 year age group indicated that older individuals had chosen to study at TAFE to update their knowledge and improve their opportunities for personal development and making career changes.

Respondents' perspectives on how effective the course was in terms of preparing them for obtaining a job and for the workplace were obtained, to determine whether the course had actually fulfilled respondents' desire to gain employment. Of those who started their paid work six months after completion of their course, less than fifty percent rated the course activities in helping them to get a job either well or very well. This finding suggested that more emphasis on course activities in helping respondents to get paid work is necessary. For example, there should be more opportunity to do work experience so that respondents can gain as many practical skills as possible and have a better understanding of the workplace. More opportunities to develop resumes, write job applications and practice interviewing techniques should also be provided to build respondents' confidence in applying for positions. More contacts with employers are also required to help students and their teachers to find out what the market/industry wants so that courses can be structured in ways that are relevant to industry needs.

A high proportion of respondents thought that the course had prepared them for the workplace, especially in terms of working with other people and understanding health and safety issues and appropriate dress requirements. Respondents also believed that they were well prepared for equal opportunity issues at work and how to deal efficiently with customers. However, the mixed feelings given by respondents about the effectiveness of some course activities aimed at preparing them for the workplace implies that other issues such as level of wages or the length of hours were not fully understood by the majority of respondents. This suggested that course activities aimed at preparing respondents for the workplace could be improved. In particular, respondents could be made more aware of the exact level of wages to expect and the number of hours they will be expected to work.

Over three-quarters of respondents who were working six months after the completion of their course indicated that their paid work was related to their TAFE course. Furthermore, almost all of these respondents also believed that the course was very useful or of some use to their paid work. These findings suggested that the expected outcomes from doing the course at TAFE were achieved by many respondents. This is also supported by the factors that helped these respondents to obtain their paid work. Although, various reasons were reported by respondents, the most frequently identified factors were increased skills and work experience gained from doing TAFE course and a TAFE qualification.

The increase in ability to collect, analyse and organise information as well as to solve problems and use technology indicated by over sixty percent of respondents suggested that the course was efficient in helping respondents to gain extra skills. The efficiency of the course was also supported by the fact that a high proportion of respondents also reported improvements in their ability to work with others and in teams, and in the ability to communicate ideas and information. Since undertaking a TAFE course, most respondents also indicated that they were better at planning and organising activities. These findings, however, were not consistent with the reported ability to use mathematical ideas and techniques. Less than fifty percent of respondents thought that their ability to use mathematical ideas and techniques improved as a result of their TAFE course. This suggested that the course was perhaps inadequate at helping all respondents to gain the ability to use this skill. However, a similar proportion of respondents who reported improvement in the ability to use mathematical skills and techniques also reported that there was no change in their ability to use this skill. One explanation for this finding could be that once the basic mathematical skills and techniques are learnt, there is a high chance that these would not change over time and therefore it is to be expected that there would be no change in this ability. It could also be argued that no change in the ability to use mathematical ideas and techniques was attributed to the fact that respondents were enrolled in courses that did not require them to use this skill. Because there were fewer than thirty respondents in each course, it was difficult to develop meaningful analysis of the data at the course level. It is anticipated that more graduates will be recruited in the next phases of the study. This will make it possible to analyse the data at this course level to provide better explanations of why there was no change in the ability to use mathematical ideas and techniques for a larger number of respondents.

Overall, the majority of TAFE respondents predominantly agreed that TAFE assisted students to build on their work and life skills. It provided the environment to achieve maximum potential and was a good place for re-introduction to study. TAFE was also considered to provide a good start to University, increase job opportunities and improve earning potential. Altogether, students predominantly agreed that TAFE provided value for money.

The findings to date have shown what happened to TAFE 'graduates' six months after completion of their TAFE course. At this stage, 'graduates' in this study believed that their TAFE course was relevant to their goals. In addition, the majority of respondents also believed that the course was effective in preparing them for the workplace and for getting a job. Most importantly, however, they believed that their desires to gain employment and gain extra skills had been fulfilled. If the findings from this study are true for all TAFE graduates, then TAFE Institutes are providing students with the appropriate training which allows them to gain extra skills and find employment.

Conclusion

An in-depth picture of the lives of TAFE graduates after they complete their education and training at TAFE Institutes provide valuable information about the outcomes of VET programs. The information collected allows the evaluation of the effectiveness of TAFE courses in assisting graduates to meet their objectives. In addition, the information provided also enables TAFE Institutes to re-assess the structure of their courses so that they are more relevant to industry needs and especially, the needs of TAFE graduates.

This report represents the findings of the first phase of this longitudinal study of VET outcomes. The findings from this first phase of the study describe and speculate the whereabouts of a small sample of TAFE 'graduates' at six months after completion of their TAFE courses. Hence, it is very difficult to make any definitive conclusions about the outcomes of VET programs.

It is anticipated that the findings from the next two phases of this study will provide more information about the outcomes of VET programs. During these phases, information on the training and labour market mobility of TAFE graduates will continue to be collected. This information will consequently improve our understanding of TAFE courses and their effectiveness in meeting students' needs.

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SEEKING THE GEEK GIRLS
EXPLORING WOMEN'S AND GIRL'S PERCEPTIONS OF INFORMATION TECHNOLOGY

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The Information Technology - IT Industry in 1999 is characterised by a particular perception:

> "a career in Information Technology is often viewed as a masculine career. It is often associated with high level mathematical competence, individualistic working conditions, and low levels of social skills (i.e.: the vision of the "geek" in the backroom programming, Gale, 1997, 44)".
>
> Amanda Elliot, **Women in(to) Computing**, 1998, p.4

For many years the Australian Information Industry Association and the Information Technology (IT) Industry has been concerned about the ratio of women and men involved in this Industry. The development of the first training package - the IT Client Support Training Package made it possible to introduce an adaptation to the schools.

In 1998 the Vocational Education and Training IT (Information Technology) course was introduced as a pilot program into 40 schools in NSW. The initial enrolment reflected a smaller proportion of female students (one third) to male students. In 1999 it is anticipated that there will be approximately 200 schools and approximately 2,000 students participating in this program.

Concern was raised by the Information Technology Industry Training Advisory Board (ITITAB) that this ratio reflected the Information Technology Industry, i.e. there are significantly more men than women employed in the industry. The ITITAB is very aware of the shortage of women in the industry and commissioned a report in October 1998 to substantiate anecdotal information and consolidate research in this field.

A survey was developed and sent to Schools participating in the pilot program to ascertain the perceptions of the Information Technology Industry by girls in Years 11 and 12 .

The main findings indicated:

1. That there are very few girls doing the Information Technology Course.
2. Very few girls have considered doing Information Technology as a career.
3. Students had very little and often incorrect knowledge of the Information Technology Industry.

A Year 12 student contemplating a career in Information Technology stated that it was a "fast growing industry". However the majority of students reported that they did not know what type of jobs young women would choose in the Information Technology Industry.

Over half of the Year 11 and Year 12 students responded that they didn't have enough knowledge of the industry to answer the questions regarding women and career change within the Information Technology Industry.

When the students were asked how Information Technology could be made more interesting the majority of Year 11 students responded that they did not know. However, in the suggestions which were made, one student asked for "more information....so people can make informed decisions" and another stated "many people are ignorant of what information technology involves, me included, it would probably be more popular if it was publicised more".

Other students believed that the IT Industry needed to advertise the more interesting sides of IT: "(Industry needs to) emphasise that Information Technology is not about becoming a programmer or hacker - (there are) many other jobs that are more interesting". What are these Jobs? The range of positions include Project Managers, Systems Analysts, Internet Designers, Business Development Strategists, Marketing roles, and many more. More importantly, the first career job is but a start on the career cobweb, that can be creative, diversified and fulfilling. If we think of our own experiences I am sure that the first job in which we first started is not what we are doing today.

In response to the previous question, the majority of Year 12 students responded that they did not know how Information Technology could be made more interesting. Of those who did answer this question the response ranged from stating that the industry needed to make it easier to enter and provide more opportunities for promotion.

Overall the data indicates that few of the Year 12 students know much about the IT Industry or the courses offered at TAFE. They appeared to be unaware of career opportunities and directions within the industry and these students have little, if any knowledge, of the Information Technology Industry and the career opportunities within this industry.

In recent discussions with John Price, Chairman AIIA Education and Training Forum, and InfoComP Chairman, he stated that the Victorian Government as well as the NSW Government, will be undertaking a campaign to promote IT careers. The AIIA Education and Training forum has released a presentation template to assist in promoting careers in IT and is available on their website www.AIIA.com.au. An IT training package, developed in close consultation with industry by the ITAB will be released in April 1999. This will act as a stimulus for training providers to build courses to support traineeships.

In addition a Skills Crisis Taskforce formed by the AIIA (Australian Information Industry Association), ATIA (Australian Telecommunications Industry Association) and Telstra was also planning to launch a national marketing campaign. It is hoped that these programs will encourage students to choose a career in Information Technology which has sustainable employment and career opportunities in Australia and overseas.

The link between students' perception and the IT Industry is a bit like a child in the first two years of their life. A child has the ability to walk and talk but mastering these skills takes time and effort. Educating students about the choice of careers and opportunities within the IT Industry will take an education program, which involves the active participation of schools, tertiary institutions and industry.

Seeking the Geek Grrls in TAFE

Current work in partnership with the IT ITAB and Northern Sydney Institute demonstrates an active relationship with schools and industry.

Within Northern Sydney Institute the participation rate of women in the Information Technology courses has been declining in recent years. In addition, young women school leavers are almost absent in the student profile of current high award TAFE courses in Information Technology. Mature aged women are represented in small numbers, many coming with assisted entry via an access course. It is an issue as to why the participation rate of women is so low in a vocational growth area.

In comparison young women predominate in related course areas eg Office Technology and matured aged women in courses such as Library Services Programs and Computer User Services. The vocational outcomes can be of significant difference due to the award of study within these program areas and their employment application.

Snapshot of Statistics

- In sum, young women are present in high numbers in the Office Technology course areas, as also are matured aged women. Young men predominate in the Information Technology courses, with mature aged women in smaller numbers.

- In Information Technology and Telecommunications programs, young women make up only 9% of the student group in the 15 to 19 year olds [Certificate 4 and Diploma courses], while their group make up 70% of the enrolments in Office Technology courses [principally Statement of Attainment and Certificate courses]. Women 25 years and over make up one third of the student group for this age group in Information Technology, and are 80% of the age group 25 and over in Office Technology.

- Girls in Joint TAFE Schools programs in our Institute make up slightly more than 50% of the student group but the pattern where computing is involved tells a similar story to the pattern within TAFE: ie young women participating in courses in office related technologies rather than Information Technology career routes.

Information Technology	8 girls, 54 boys [1998 figures]
Computer Applications for the Office	11 girls 4 boys
Computing Skills for the Office	26 girls 17 boys

It needs to be recognised that there are many factors which operate to shape the destination of a school student taking up a JSST course place eg teacher influence in steering students, or a negotiation of a narrow band of course options for a particular group of students by the school, geographics/locality etc.

We recognise many factors play a role in career selection and destinations of individuals. But a message lies within the application pools when the applicant profile is very narrow. Clearly the computing industry is not attracting a broad profile of students to move through the prerequisite training paths, and certainly not young women.

Surveying Girls

The opportunity of 45 Year 8 girls coming to Crows Nest Campus for an Information Technology Day was too great an opportunity to miss, so a short survey was included in their program to gather data on their perceptions of the computing industry. A survey of selected questions from the ITITAB commissioned survey were replicated.

The findings in summary :

- 44 of the 45 girls had access to a computer at home and regularly used it for homework, Internet access, games and 3 girls said for entertainment.

- 10 answered they would like a career in computing ['love using them', 'more convenient to use them', 'obsessed with computers and want to show it's not a male profession'], and a higher number said they would like a job in IT when they finished school.[15]

- 11 students felt there were definitely obstacles which prevented young women from choosing a career in IT ['it's not a female job', 'discrimination, not considered a women's job'.] ie one quarter of the girls surveyed held these beliefs, that it would be difficult to be a woman in this industry area.

Where to next?

Open Discussion

- Has anyone been involved in a successful career path education program for girls in an emerging industry area?

- Was there a magic formula - what worked?
- Has anyone had experience in linking the school, tertiary and industry environments - what would a good approach be?
- Does anyone know of a project being conducted into which we could link?

WORKPLACE TRAINERS: WHAT DO THEY DO?

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ABSTRACT

The role of the workplace trainer is growing in significance. This paper examines the role of workplace trainer as conceptualised in the recently released Training Package for Assessment and Workplace Training. Ways are explored of recasting this role in the light of a continuing research study and network learning theory.

Introduction

The organisation of learning in the workplace has taken on a new significance in the current policy climate. Many workers in a wide cross section of enterprises are increasingly being asked to take responsibility for facilitating the learning of their colleagues. Despite this shift there has been precious little research relating to the role of trainers, particularly the link with quality (Simons and Harris 1997, 6). This paper explores the role of the workplace trainer in enterprise settings and how this role might vary according to the nature of the learning and the work undertaken in enterprises. The first part of this paper explores the workplace as a learning environment and how it shapes the learning that takes place and hence the role of the workplace trainer. Current conceptions of the role (as embodied in the recently released Training Package for Assessment and Workplace Training) are contrasted with preliminary data collected in interviews with and observations of workplace trainers in three industries in three states. The final part of the paper then explores how the role of the workplace trainer might be recast in the light of learning network theory.

The workplace as a learning environment

The nature of learning that takes place in a workplace varies widely (Hager 1997, 9). Learning can be associated with formal training programs that may or may not result in some form of credential. As Candy and Matthews (1998, 14) note, this tends to be associated with the use of experts (trainers) who play a leading role in transferring the required knowledge and skills to the workers. The workplace is also a site for informal or incidental learning (Marsick and Watkins 1990, Hager 1997). Research evidence points to the value of both types of learning in the workplace and to the importance of achieving a productive balance between the two (Hager 1997, 9). It follows, therefore, that the role of the workplace trainer needs to take into account these different ways of structuring learning in the workplace.

Research has shown that while the workplace has distinctive advantages as a learning environment, there can also be drawbacks, particularly in small enterprises (Billett 1994, 1996; Harris, Willis, Simons and Underwood 1998). This is not to say that enterprises, and in particular small enterprises, do not value training. However, within the VET sector there has been a tendency either to see training and learning as synonymous (Field 1997) or to place a higher value on training which is structured and delivered (and therefore able to be controlled). Training of this type tends to lose its relevance, especially in the context of smaller enterprises. As Smith (1997) points out, this does not mean that smaller enterprises are less committed to learning. Rather, they rely on different types of learning from those promoted in VET policies and by VET providers.

In contrast with large enterprises, training in small and medium enterprises (SMEs) tends to be informal, enterprise-specific, undertaken on-the-job and related to day-to-day operations (Seagreaves and Osborne 1997, 47). Fundamentally, it is learning through work, where learning is integrated into doing the job. The learning environment provides a context where learning is embedded in or co-terminus with work (Scribner and Sachs 1990). This form of learning is distinctive because it:

- is task focused;
- occurs in a social context where status differences can exist between workers and there are often clear demarcation lines between groups of workers;
- often grows out of an experience such as a problem, crisis or novel event;
- occurs in an environment where people receive remuneration for their work; and
- entails different cognitive processes from those used in an off-site environment.

(Retallick 1993; Billett 1994, 1996a)

In small or micro business (which employs less that five persons) learning is very often facilitated on a one-to-one basis. The "training" is often unplanned, unscheduled, unrehearsed and spontaneous, often in response to a crisis or problem, and therefore often intuitive (Vallance 1997, 120). This training is characterised by the absence of dedicated training staff, and is often undertaken by the person(s) nearest the crisis who usually has little or no training expertise (Hawke 1998). Smith (1997) notes that learning often occurs in informal and "non-traditional" ways and is very dependent on time and the operating context in which the enterprise finds itself.

In many respects learning in the workplace is quite rigorously structured. It is framed by the features and structures of the work and the work practices in which the learning is embedded (Onstenk 1995). Customs, habits, attitudes, the way individuals respond to mistakes and problems, the degree to which questioning and time for explanations are tolerated - all these frame and shape how a person designated as "trainer" might approach the task of helping workers to learn their jobs.

The workplace trainer

As noted above, the learning environment and learning processes within an enterprise provide a powerful framework that shapes how a workplace trainer operates. Any understanding of the role of the workplace trainer needs to encompass both formal on-the-job learning as well as incidental and informal learning that takes places as part of the normal course of work.

Governments and large businesses have tended to believe that defining the role of the workplace trainer will be addressed by workplace trainer competency standards. These standards have received considerable official support (CSB-Workplace Trainers cited in Peak 1992). Critical research underpinning these standards, however, has been very limited (Garrick and McDonald 1992, 176).

These standards appear to be underpinned by a "skills deficit" notion of training which is more reminiscent of institutionalised approaches to skill formation (Garrick and McDonald 1992, 176-177). The standards also lack any real links with emerging ideas such as the learning organisation (Senge 1992; Bawden 1991) or the growing body of knowledge which emphasises learning embedded in daily work practices and occurring in an informal or incidental manner (Marsick 1987; Marsick and Watkins 1990; Harris et. al. 1998).

The recently released Training Package for Assessment and Workplace Training is interesting for its attempt to recognise that training does occur in a variety of settings, with particular attention being paid to training in small groups. A unit entitled "Train small groups" has been included in the revised standards. This unit appears to equate to the former Workplace Trainer Category 1 competencies (NAWTB 1999, 25).

This unit of competency is notable for a number of reasons:

- there is an overwhelming emphasis on *training* rather than *facilitating learning;*

- formalised training appears to be valued almost to the exclusion of informal and incidental learning;
- it seems to be based on the assumption that learning in the workplace proceeds in an ordered sequence involving diagnosis of training needs, setting objectives and provision of training. This may be more reflective of an off-site environment rather than the (often) problem-based and spontaneous nature of learning that occurs in the course of work;
- it bears remarkable similarities with another unit in the training package which focuses on the competencies required to deliver training sessions within a training program. It therefore raises questions about the *specific* competencies that a workplace trainer whose training role sits alongside their role as a worker may need to develop, compared with those competencies that are relevant to a trainer working within a more structured training program where the major portion of their role is delivering training; and
- it does not make any links between the process of facilitating learning and how the work environment or work practices are part of the "resources" which the workplace trainer uses in the course of their work.

Further evidence of the scope and nature of the competencies developed by workplace trainers lies in data the present authors have been collecting recently for a study examining the role of the workplace trainer across a number of enterprises. In this study, observations and interviews were conducted with individuals who have responsibilities for facilitating the learning of colleagues. Three industries were targeted - information technology, real estate, and building and construction. Enterprises were chosen from SA, NSW and Victoria to include small, medium and large organisations.

The following table, currently being developed from detailed analysis of interview transcripts and observation reports, presents some components of the work of these workplace trainers. In the course of the interviews and observations, we saw evidence that does lend support to the description of the workplace trainer as embedded in the current standards. However, there was also significant evidence of ways of working that seemed reflective of approaches which placed learning and work alongside each other and where formalised approaches to learning co-existed with informal and incidental learning.

Organises learning collaboratively with the trainee/learner ➢ organises time, activities, resources to support learning ➢ negotiates tasks, goals for learning within the work activities to be completed ➢ links assessment and learning to work tasks or future learning opportunities
Learns together with others ➢ shares experiences (attending events such as training sessions, meetings, conferences, telling "war stories", working with each other on a task, working alongside each other on related tasks, etc.)
Promotes independence and self-direction in learners/trainees ➢ organises (including selection of tasks that match learner/trainee's level of skill, knowledge, experience, etc.) tasks which the learner/trainee tackles on their own ➢ encourages others in the workplace to be supportive of learning efforts of trainee/learner
Advocates on behalf of learners/trainees ➢ negotiates access to resources ➢ liaises with external training providers

Reconciles experiences of work and learning ➢ makes links between the requirements of a training program or immediate learning needs and modifies work or learning program to achieve a better fit
Works alongside learner/trainee ➢ draws the learner/trainee into the patterns of work ➢ connects work tasks with the learning goals, program ➢ fits facilitating learning into the stream of work commitments ➢ alters the pattern of work to make space, time for the learning process ➢ makes judgements about the balance between the learning needs of the trainee/learner and the need to deal with the immediate task ➢ monitors the work flow and quality of the learner /trainee as the job/task proceeds
Draws on others in the workplace to help facilitate the learning process (this includes asking others in the workplace to work with the trainee/learner; bringing in other people to the learning discussions, etc.)
Discusses learning experiences with trainee/learner (these could be experiences shared in common or ones that the learner/trainee had experienced on their own. This can occur at a time apart from work, but also often occurs during the course of work. This discussion can relate to the task at hand or, if the work at hand is routine, to other topics of learning that are of interest to the learner/trainee) ➢ asks questions (to monitor progress, to check understanding, to encourage reflection and self evaluation, to draw the learner/trainee towards developing their own knowledge rather than "just telling them") ➢ challenges ideas and thinking by telling "war stories" ➢ corrects mistakes in a positive, non-threatening manner ➢ extrapolates learning from current task into other situations and encourages trainee/learner to do likewise ➢ provides feedback (for reinforcement, correction, encouragement)
Assesses work and learning using both formal and informal processes
Demonstrates techniques, processes, etc.

Our data suggests that the role of the workplace trainer is shaped by the work of the particular enterprise. Within real estate enterprises, workplace trainers tended to be focused on an individual. Much of the learning is undertaken in a self-directed manner (that is, the learner works through a section of a module and then consults with other staff to monitor their progress etc.). This seems to mirror the individualised structure of work in the industry where each employee has a portfolio of properties that he/she manages fairly much independently from others. In contrast, learning within the IT industry is often team-based because work is organised around "projects". Individual members of the group who have expert knowledge in an area share this with other members of the group, with the support and encouragement of a workplace trainer who often is also a team leader or supervisor. In some instances workplace trainers complemented the learning undertaken in these small groups with more formalised training programs such as an enterprise-wide mentoring program for newly appointed staff.

In the same way that the structure of work shaped the learning events, so too did the degree to which the learning program was formalised, sometimes by an external organisation. In the real estate industry, all of the workplace trainers were part of the traineeship program being managed by the Real Estate Institute. This external factor played a part in shaping the way the trainee tackled learning tasks and the manner in which the workplace trainer tackled their role. However, incidental and informal learning still played an important and integral role in the trainees' learning.

Whilst there are similarities with the elements of competency articulated in the unit "Train small groups", we would also contend that the above descriptions derived from observations of workplace trainers reveal the inter-relatedness of facilitating learning in the workplace and working. These two streams of activity are both important to capture because they are both integral to the work of the workplace trainer. We believe that these descriptions reveal that learning in the workplace is, in reality, a mixture of more structured approaches to facilitating learning and incidental and informal learning. In addition, the curricula, rather than being predicated primarily on defined competencies or identified training needs, is made up of the work of the enterprise. The work becomes the "developmental pathway" which the workplace trainer shapes and uses in the process of supporting the learning of staff. These observations, we believe, create the need to examine alternate theoretical frameworks to assist in reconceptualising the role of the workplace trainer.

An alternative framework for understanding the role of the workplace trainer

Learning network theory (Van der Krogt 1998) may provide a useful framework for us as we strive to understand this issue in the light of our research data on the role of the workplace trainer. This theory rests on the following key ideas:

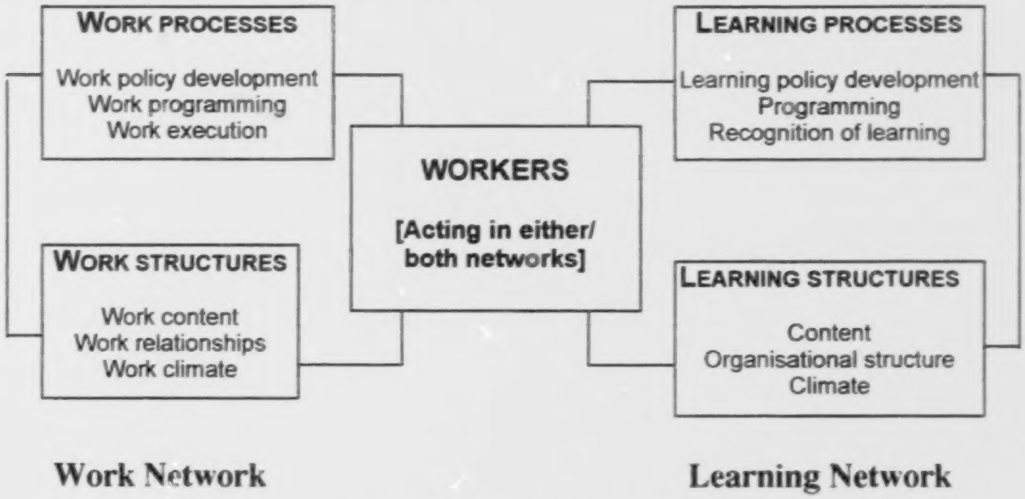
The concept of 'network' is understood in a particular way.

An organisation is made up of a series of networks. These networks (and therefore the organisation) are constantly being shaped by the actions of workers ('actors'). Furthermore, the organisation itself is located in an environment that is part of a network.

In understanding workplace learning, two networks are of particular importance – the learning network and the work network.

Both of these networks are created and recreated over time. The actions of the workers and the structures within an organisation act on each other and shape the networks that emerge over time (see Figure 1).

Figure 1: The learning and work networks


WORK PROCESSES
Work policy development
Work programming
Work execution
LEARNING PROCESSES
Learning policy development
Programming
Recognition of learning
WORKERS
[Acting in either/ both networks]
WORK STRUCTURES
Work content
Work relationships
Work climate
LEARNING STRUCTURES
Content
Organisational structure
Climate
Work Network
Learning Network

[Source: Van der Krogt 1998:163]

Different types of organisations are characterised by different learning and work networks

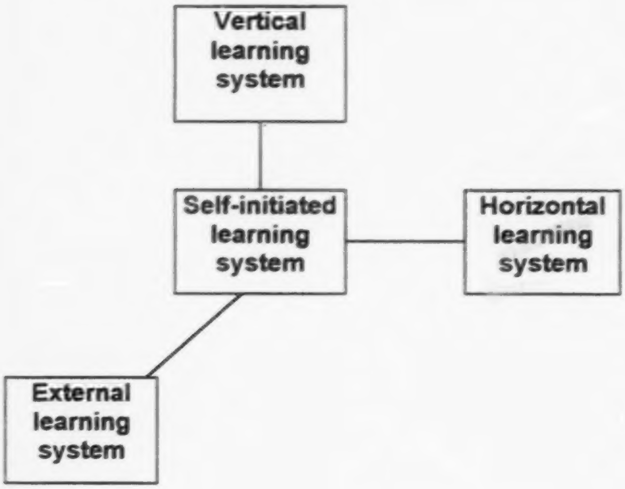
Within different types of enterprises, a certain form of work pattern is dominant. This work pattern is visible in the way work is undertaken and is constructed over time by the actors in the network.

In a similar way, key workers (actors) shape the structure of the learning processes (learning policy development, programming and qualifications) and create a learning network. It is important to note that Van der Krogt specifically states that the "learning structures" refer to both formal programs (offered internally and externally) *as well as* the informal and incidental learning which occurs in the course of work. By examining the nature of the learning that takes place in enterprises a number of different types of learning systems can be identified:

- Self-initiated learning systems allow the learner the freedom to organise their learning. Learners' interests and needs are of paramount importance.
- Vertical learning systems encompasses learning that is underpinned by structural supports which exist inside the enterprise such as needs identification, training plans, use of trainers, human resource departments etc.
- Horizontal learning systems emphasise learning that occurs where people establish groups as a basis for implementing learning programs.
- External learning systems emphasise learning that is predominantly driven by external contacts such as professional associations, institutes, outside consultants or, in the case of many enterprises in Australia, the NVETS framework. They establish the content, processes etc. for the learning system which are then implemented within the enterprise.

A learning network then can be conceptualised as a three-dimensional space that consists of these learning systems (see Figure 2). The workplace trainer facilitates learning within this space along any number of these dimensions.

Figure 2: The learning network



[Source: Van der Krogt: 1998: 168]

Implications for workplace trainers

Within enterprises, learning and work networks develop a specific shape and relationship to one another. Networks are shaped and reshaped by the actions of individuals and groups within them. Rather than viewing workers /learners in an enterprise as passive recipients of training, their presence is highly influential. In concert with the actions of those designated to act in the role of workplace trainer, they work together to influence the shape of the learning that takes place as well as the shape of the work that is performed alongside this learning.

Network learning theory also acknowledges that learning in an enterprise is not solely activated, nor centred on, the activities of the workplace trainer. Individual workers can and do initiate their own learning. Network learning theory shows that it is possible to manage the tension between the needs of the learners and the needs of the workplace when designing and implementing learning systems. Designing and implementing learning systems in workplaces need to take account of *both* the learning capacities and needs of workers *and* the requirements of work.

Learning network theory provides added impetus for changing the focus of the activities of a workplace trainer from training to learning. This effectively shifts the locus of control to the individual and places the role of "trainer" in a position where they act to support and strengthen individual workers' learning activities in a number of ways.

People acting as workplace trainers are key players in the learning network. They also remain actors within the work network. The extent of their involvement in each of these networks is determined by the manner in which the work network is structured. Workplace trainers and their activities are shaped by the work network which is shaped, in turn, by the learning network. There is a synergistic relationship between the two networks and the workplace trainer is the "boundary rider" between the two systems.

The actions of a workplace trainer in supporting learning can encompass a number of key dimensions - in groups, with individuals, in formalised programs, and in incidental and informal ways. These actions to facilitate and place some structure on the learning process co-exist with individual workers' self-initiated learning actions in the workplace. An effective workplace trainer will have knowledge of how the learning network can be shaped by the actions of the workers in that network and how the learning network interacts and is shaped by the work network.

We believe that network learning theory provides a new way of conceptualising the role of the workplace trainer beyond that of an actor in a formalised, vertical learning system which, we contend, is the predominant focus of current workplace trainer competency standards. It values the actions of the workplace trainer in supporting incidental and informal learning within an enterprise and the important contribution that these forms of learning can make to the overall development of a learning network within an enterprise. It acknowledges the interrelationship between learning and work. It offers a way of grasping (but not totally reconciling or ignoring) the tension between the learning needs, capacities and desires of individual workers and the need for work relevant learning.

It may well be that government attempts to promote a 'Training Culture" within enterprises cannot hope to succeed without clear recognition of and due consideration given to systems other than the vertical. To chat benignly about learning organisations being those where learning is co-terminus with (and by implication, "happily married" to) work, or to attempt to implement formal training using a top-down, skills deficit approach - either of these is only a part of the picture. In our view, the first lacks reality and is destined to remain in glossy managerial documents as an attractive philosophy with little hope of actual implementation. The second is somewhat 'colonial' and is appropriate only for certain types of organisational culture, comforting for systems that need to count numbers in formal training programs, at best short-term, and not feasible for small businesses which comprise a huge proportion of the Australian economy. From our perspective, then, the reconceptualisation of the role of workplace trainer" would appear to have much to offer those interested in promoting government policies to develop a "Learning Culture" within enterprises.

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WHEN ONE SURVEY IS NOT ENOUGH: THE USE OF THE DELPHI APPROACH IN VET RESEARCH

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ABSTRACT

The Delphi method was utilised to solicit the views of senior people responsible for policy, staff development and other significant VET commentators, about the challenges faced by VET practitioners and the associated staff development issues. The researchers found that the Delphi method appeared to offer some advantages over more common forms of research with such people. The paper presents some key findings from the research in order to illustrate points about methodology.

Introduction

This paper reports on one aspect of a larger NREC-funded project concerned with staff development in VET ("Improving the quality of VET provision: the role of staff development for teachers and trainers in VET providers"). This project is being carried out by the University of South Australia (Centre for Research in Education, Equity and Work), Charles Sturt University (Group for Research in Employment and Training) and Queensland TAFE (Centre for Advancement of Innovative Learning). As well as the element reported on in this paper, the project also includes:

- a study of all major current Australian staff development initiatives in the VET sector;
- a survey of Registered Training Organisations to establish current levels of training of VET teachers and availability of staff development, and whether these relate to modes of employment of the teachers; and
- case studies in 15 providers.

This paper has as its focus the way in which the project team researched the future staff development needs of teachers and trainers working for VET providers. The prime concern was to identify the significant challenges facing teachers and trainers over the next seven years and to gauge the extent to which they had the necessary knowledge, skills and other attributes to meet these challenges. The "gaps" between what is perceived to be required to meet those challenges and the current levels of knowledge, skills and other attributes of teachers and trainers is a useful indicator of staff development needs over that period. It was decided to use the Delphi method for this research.

Planning staff development in the VET sector

Staff development is a broad term, which can encompass both activities organised by the employer to ensure that staff are able to operate effectively in their present positions in a changing environment and activities selected by individuals to enhance their opportunities for advancement. This paper is mainly concerned with the first kind of staff development where an organisation is responsible for maintaining and upgrading the performance of its staff.

It is relatively easy to talk to or survey staff about the quality of staff development they have received and to identify strengths and shortcomings. However, whilst this kind of research provides useful information about the way in which such programs should be run in the future it has much less to contribute concerning the actual content of and emphasis needed in future staff development programs. Such limitations are evident in a number of recent studies (e.g. Chappell and Melville, 1995).

In the past it has also been common to obtain estimates of future staff development needs for State or national systems by getting together a small group of people for a relatively short period and pooling their thoughts. Commonly those involved in such 'think tanks' are professionals in the staff development field. The gathering and analysing of information from such groups is an ill-defined process and the outcomes depend very much on the nature of interactions between members of the group over the period. Such interactions are influenced by the status and power of individual participants. In some cases a particular issue, concern, government policy, political imperative or recent development can dominate the deliberations. For example, a consultant engaged by a TAFE system may present a particular view of the future of VET which may affect the way in which the system plans its long-term staff development policy. Alternatively, a carefully thought out strategy may be upset by an ANTA initiative such as the introduction of Training Packages, which necessitates diverting resources to meeting an immediate need.

For these reasons the typical one-shot expert approach has had limited success in providing useful longer-term guides to staff development and it seems that another approach may be needed. Accordingly, a different approach was sought in the current project, and it was decided to use the Delphi method, a research method more common in the 1960s and 1970s but in less common use nowadays. However, the method is described in current texts on research (e.g. Gredler, 1996). It is a method for attaining group input which differs from the more commonly-used focus group or nominal group techniques.

Delphi method

The Delphi technique (named after the oracle at Delphi, and made popular by the Rand Corporation) is useful for obtaining a pooled judgement about something. It is essentially a method for aggregating the opinions of a number of individuals who are considered to be in a position to make an informed input. The technique is useful in obtaining input into an evaluation related to a current situation or a situation which is considered likely to exist in the future (Gredler, 1996). It is similar to the nominal group technique, which is often used for identification of issues and concerns (Pokorny, Lyle, Tyler and Topolski, 1988). The nominal group technique usually involves a group of seven to nine individuals who begin by developing a set of ideas in response to a stimulus question in silence. After this each person contributes an idea which is recorded. Each idea is discussed and the session ends with each person rank ordering those ideas.

The Delphi technique usually involves many more people than the nominal group technique and can be more extensive in terms of content. The members of the group do not meet but respond individually to a series of questionnaires in an iterative process which extends over a period of time (Uhl, 1990). The first questionnaire is used to set the parameters for latter questionnaires and generally consists of fairly open- ended items concerned with broad issues to which individuals respond anonymously. The responses to the first questionnaire are processed and used to construct a second questionnaire.

This second instrument serves two purposes (i) to provide feedback to participants concerning the results from first questionnaire and (ii) to allow them to respond again to the same issues in the light of this feedback. The second questionnaire generally contains relatively closed items, which accurately reflect the spectrum of opinion obtained in the first questionnaire. The items are designed in a way which gets participants to rank the relative importance of issues and the appropriateness of particular responses to those issues. Likert scaling is frequently used to obtain such rankings. Participants are also able to comment on any matter and identify new issues, concerns or responses to those issues or concerns. A summary of responses to the second questionnaire is prepared to accompany a third questionnaire, although in some cases only two are used.

This final questionnaire asks participants to consider the items in the second questionnaire, possibly in a refined form, together with any new items. It is designed to obtain a measure of the strength of agreement on the issues identified in the first and second questionnaires.

In this sense the Delphi technique encourages a degree of consensus and for this reason the initial selection of participants is critical. The selection must be such that a broad range of judgements will be expressed. This enables participants to temper their judgements in the knowledge of what other informed individuals have expressed. As the process of judgement gathering takes place over a period of time individuals are able to engage in extended reflection on the central issues. This is an important attribute of the Delphi technique. It provides a very different environment from that of a focus group or think tank where individuals interact over a relatively short period and some opinions are not necessarily expressed or not taken up by the group.

Participants

Early in the design of the project it was agreed that a group of about 50 key stakeholders in the VET sector would be selected for the Delphi study. The project team decided to seek nominations the following categories:

- State/Territory VET executives - CEOs
- ACPET executives
- State/Territory Professional Development Managers (TAFE)
- National Assessors and Workplace Trainers Body
- DEETYA VET Division
- University VET academics - person in charge of teacher education
- VET Policy-makers
- VET consultants / researchers / project managers
- Union representatives
- Two overseas senior VET people (UK and USA)
- Other significant commentators

An initial list was drawn up and circulated to members of the project team who consulted with others they considered might make appropriate suggestions about additions and deletions. The revised lists were reviewed by the team and a final list of 56 key stakeholders was sent questionnaire one (Appendix 1). Fifteen responded by the initial due date, with twelve more responding by the extended due date following reminder phone calls, making a response rate of 48& A further four responses were received too late for the initial analysis. In some cases delays in replying were due to the fact that CEOs had passed the questionnaire to appropriate management or curriculum staff for response.

Each of the 56 key stakeholders received feedback from round one and was asked to participate in round two irrespective of whether they had responded in the first round. 30 people responded to questionnaire two (Appendix 2), a response rate of 53%, including a small number who had not participated in round one. No reminder phone calls were made for this round. This represented an excellent response rate, especially considering that this survey was conducted in December, 1998, a very busy time for most VET personnel. The same process as used in round two will be employed in the third and final round.

Reflections on the Delphi method

One challenge faced by the research team was analysing the responses to the first questionnaire, which had been devised with a large proportion of open-ended questions. The responses needed to be analysed not only to give meaningful data, but also to be fed back to the participants. The responses to the open-ended questions were categorised, firstly by a research assistant then by the researchers, and the responses printed on the second questionnaire. In addition to further questioning about Round 1 questions, in Round 2 a new section was added where interesting statements from the qualitative sections of Round 1 were listed, and participants asked to note the extent of their agreement with the statements.

It is possible that the participants, on receiving the second questionnaire which included the responses to the first, realised that other stakeholders had taken the process extremely seriously, and this prompted the good return rate for Round 2. It was also notable that in Round 2 there were fewer sceptical or critical comments on the process and the questionnaire structure, which a few participants had included in Round 1. Critical comments in Round 1 included:

- This questionnaire is poorly designed if the aim is to obtain info about VET teachers that really captures their different circumstances
- This issue is too large for a questionnaire like this

Also a few responses to Round 1 were extremely sketchy, also perhaps implying resistance to the process, whereas Round 2 responses were more fully completed, In other words the Delphi process appears to have encouraged some participants to move from initial resistance to taking part in the process to a more positive engagement with it.

Round 1 produced a number of extremely detailed responses, to individual questions as well as in the "any other comments' suggestions. Some of these discussed not only staff development but also the VET system in general, and appeared to be a means for participants to express their dissatisfaction with certain aspects of the system, in a forum in which they hoped their views would be heard. Round 2 responses contained fewer such responses, although space was allowed for 'other comments'.

Other participants expressed their dissatisfaction, even contempt, for certain players in the VET system by the strength of their responses. Universities that provide VET teacher training appeared to be a major target. For example a few people consistently 'voted against' the usefulness of VET teacher training at universities, one respondent even adding an extra column of 'very strongly disagree' to a question about putting professional development into the universities. Yet another respondent commented, in the 'any other comments' section:

- This survey seems to emphasise staff development at unis. This I do not agree with, S.D. should be at the VET institution.

In fact, universities were mentioned only twice in the questionnaire, but clearly even these instances were sufficient to upset some participants. Such responses clearly indicated deep-seated antagonism between elements in the VET field which need to be addressed.

Findings

It was of interest to note the way in which the group's responses changed from one questionnaire to the next. It seems likely that the feedback from an earlier questionnaire prompted a revised response. There may of course be other reasons for changed responses. As all questionnaires were coded it would be possible to track individual responses and examine the amount of change. This section presents the results of two of the questions and discusses the changes that appear to have taken place.

Although at the time of writing this paper, only some of the questions in Round 2 had been analysed, it can already be seen that the weight of opinion of those responding to questionnaires one and two shifted perceptibly. An example of this is the following question (Table 1) about usefulness of sources of training. This is an example of a closed question which was repeated in both rounds, with the only change being the addition of the results from Round 1.

Although there was not a huge shift in responses, there was some movement. Overall, participants had a slightly more positive view of the ability of sources of training and development to meet challenges. The only source of training which received a lower score on Round 2 than Round 1 was university teacher training. This dropped from joint first to last. 'Framing the future', the ANTA-funded program concerned with the National Training Framework, retained its position in first place, with a considerable increase in the mean.

Table 1: Responses to question 3

QUESTION 3.

How useful are the following sources of training and development in helping to deal with these challenges? Give ratings of 1-5, 1 being not useful and 5 being extremely useful.

Unbracketed responses are from Round 1; Round 2 responses are in brackets. (Round 1, n=29, Round 2, n=27)

Sources of training	1	2	3	4	5	Weighted mean
"Initial Teacher Training at University	4(4)	8(9)	5(7)	7(4)	5(3)	3.03 (2.74)
Certificate IV in Workplace Training	6(2)	8(8)	8(10)	7(6)	0(1)	2.55 (2.78)
Nationally funded training e.g. Framing the Future	4(2)	6(2)	7(11)	9(8)	3(4)	3.03 (3.66)
"In-house" formal program training	1(1)	7(6)	14(10)	6(9)	1(1)	2.96 (3.22)
Informal on-the-job training by providers	4(2)	6(6)	10(8)	7(8)	1(3)	2.72 (3.14)

Note: The weighted mean is arrived at by the following process: Responses in each round were allocated points on the basis of 1: 1 point, 2: 2 points and so on. Totals were then gained for each Source of training for each round, and the totals were divided by the total number of responses in that round.

The following example (Table 2) shows how responses have occurred in a question which was originally open-ended and did not ask for ranking; and then requested participants to rank categories which had arisen from the first round responses. Again there was not a major shift in the challenges viewed as most important by the participants, but there were minor shifts. These could be accounted for by several reasons, such as:

- the ranking exercise acting as a sorting mechanism; or
- participants recognising and opting for challenges which they themselves had forgotten to mention earlier.

The two rounds enabled the research team to differentiate between 'major' and 'minor' challenges. There were two clear breaks in the total scores; firstly between 'operate in competitive market' and all others. This is clearly the issue which the majority of participants saw as the most important one facing VET teachers and trainers. 22 participants picked this as one of their seven choices. The second clear break was between challenges scoring 41 or more, which can be classified as 'major' challenges; and those scoring 26 or less, which can be described as 'minor' challenges. In the table (Table 2), the minor challenges have been shaded, leaving the major challenges unshaded.

Table 2: Responses to Question 1

QUESTION 1.

Nominate five critical challenges which you believe will be faced by VET teachers/trainers over the next five to seven years.

The table below indicates the categories and response numbers derived from Round 1 responses. We now ask you to select the seven most important challenges and to rank them. You have the opportunity to select one more and include it in your ranking, if you wish.

	Challenges	Number of participants in Round 1 who mentioned this challenge	Total score in Round 2 (ranking in brackets)	
1	Operate in competitive market	11	117	(1st)
2	Pace of change	10	41	(10th=)
3	Use of technology	10	51	(5th)
4	Flexible delivery	9	66	(3rd)
5	Keeping up to date/understanding changes to VET	9	68	(2nd)
6	Understand/work with training packages	8	61	(4th)
7	Globalisation of VET & the economy	7	19	(14th)
8	Maintaining their own employment/career pattern in insecure times	7	41	10th=)
9	Keeping up to date with industry trends	6	45	(8th)
10	Understanding of dilemmas in educator's role (such as industry needs vs. education)	6	50	(6th)
11	Understand changing nature of work	5	48	(7th=)
12	Competency-based assessment	5	7	(18th=)
13	Changing client groups	4	7	(18th=)
14	Changing to role of facilitator	4	48	(7th=)
15	Delivering in the workplace	4	11	(17th)
16	Balance requirements of 'real' industry with what the VET system tells them is industry requirements	3	12	(16th)
17	Greater accountability/quality issues	3	26	(12th)
18	Work intensification	2	7	(18th=)
19	Learning how to develop themselves	2	21	(13th)
20	Meeting industry needs	2	—	
21	Growing the training market	2	2	(23rd)
22	Shortage of teaching skills	2	7	(18th=)
23	Customer focus	2	13	(15th)
24	National market in VET	2	—	
25	Other – moving focus away from teaching to learning	-	7	(18th)

Note: The total score in Round 2 was arrived at by the following means: Participants were asked to select the seven most important challenges and rank them from 1 to 7. The research team then allocated points on a reverse basis (i.e. a challenge which received a ranking of 1 was allocated 7 points, a challenge receiving a ranking of 2 received 6 points, and so on). In this way the final total reflects both the number of people who selected that challenge as one of the seven most important, and the ranking which participants carried out (Gredler, 1996).

Conclusion

Use of the Delphi technique appears to have been helpful in this project in building up a reasonably clear picture of the issues that the key stakeholders feel need to be addressed in staff development programs in the VET sector. Accessing a similar number of key respondents by telephone interview would have been time-consuming and difficult to organise. A written questionnaire had the added advantage of allowing participants to reflect on their views, and the added advantage of the Delphi method is that participants were able to revisit and modify their opinions. They were made aware of the opinions of the other participants, making participation a more satisfying experience than a telephone or one-shot survey, which rarely provides feedback for participants.

A further advantage of the Delphi method seemed to be that the participants were able to shape the final representation of the data more fully than if one-shot interviews had been conducted with the researchers performing the entire synthesis. It seemed to the

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researchers that the Delphi method was more able to represent the true voice of the participants.

At this stage it is uncertain whether a third stage will be carried out for this survey. One suggestion, however, made by a participant, was that the questionnaire should be administered to a sample of VET practitioners. This would be a sensible way of ascertaining how closely the views of practitioners about their staff development needs reflects the views of the key people responsible for staff development policy. While the views of practitioners will be sought elsewhere in the project, a direct comparison using the Delphi instrument will be helpful.

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APPENDIX 1

Professional Development of VET Teachers and Trainers Survey of Key Stakeholders

Invitation to potential participants - the 50 Key Stakeholders

A national research project is being conducted by the Centre for Research in Education, Equity and Work, at the University of South Australia, the Group for Research in Employment and Training at Charles Sturt University and the TAFE Queensland Centre for Advancement of Innovative Learning. The project is funded by the ANTA National Research and Evaluation Committee. The project is entitled "Improving the Quality of VET Provision: The Role of Staff Development for Teachers and Trainers in VET Providers". An important focus for the project is identifying the kinds of challenges which VET teachers/trainers have faced or will face and the kind of staff development which has helped or will help them. A short survey has been developed to obtain some of this information.

We would be grateful if you would participate in our survey as a key figure in the VET Sector. The initial survey will require about 15 minutes for you to complete. The project team has elected to use a modified Delphi technique which provides an opportunity to comment on the outcomes. Thus the results of the initial survey will be analysed and sent back to you for some further comment about a month later. Those who respond to both surveys will receive a copy of the final results.

The enclosed stamped-addressed envelope should be returned by Tuesday 9th November. Responses could also be faxed to 02 6933 2888.

COMMENTS

Please give your own opinions which may differ from those of your organisation. Your individual responses will be confidential and comments in the feedback from the survey will not be attributed to particular respondents.

Thank you for considering this request. We hope you decide to help. Remember to return the survey questionnaire by Tuesday 9th November.

Erica Smith
Doug Hill
for the Project Team.

Reference No:

Delphi Survey of Key Stakeholders

1. Nominate five critical challenges which you believe will be faced by VET teachers/trainers over the next five to seven years.

   (i)

   (ii)

   (iii)

   (iv)

   (v)

2. How well prepared currently are VET teachers/trainers to face these challenges? Use the scale

   1 = on the whole not prepared.
   2 = only a minority prepared.
   3 = some well prepared.
   4 = majority well prepared.
   5 = on the whole very well prepared.

   (i)

   (ii)

   (iii)

   (iv)

   (v)

3. How useful are the following sources of training and development in helping to deal with these challenges? Rate each source from 1-5 where 1 = not useful and 5 = extremely useful. (Please tick appropriate rating)

Rating

Sources of training to be considered	1	2	3	4	5
Initial" Teacher Training at university					
Certificate IV in Workplace Training					
Nationally funded training eg Framing the Future, CBT in Action					
"In-house" formal program training					
Informal on-the-job training by providers					

4. What do you consider are the essential attributes, skills and knowledge currently needed by VET teachers/trainers? Answer in terms of 4.1, 4.2 and 4.3 or in an holistic manner under 4.4.

4.1 Attributes (eg attitudes and personal characteristics)

4.2 Skills (eg ability to provide on-line support and assess in the workplace)

4.3 Knowledge (eg detailed knowledge of relevant National Competency Standards)

4.4 What do you consider are the essential competencies and capabilities currently needed by VET teacher/trainers.

4.5 For each of the characteristics you have given, indicate whether you believe that most VET teachers/trainers currently possess that characteristic. Use 1 = no, 2 = possibly and 3 = yes. Place your rating next to the appropriate characteristic.

5. What additional attributes, skills and knowledge do you think will be required over the next five to seven years?

5.1 For each characteristic you have listed above, indicate whether you believe teachers/trainers currently possess that characteristic. Use 1 = no, 2 = possibly and 3 = yes. Place your rating next to the appropriate characteristic.

6. What do you consider are the main barriers to the development of the attributes, skills and knowledge currently needed by VET teachers/trainers? Please list up to three barriers)

(i)

(ii)

(iii)

7. Name and briefly describe an example of a professional development program which you believe has contributed to the development of improved practice by VET teachers/trainers.(If you do not know of any, write "Don't know any"; if you believe no programs have had such an outcome, write "None".)

7.1 If you named an example: What made this program effective?

7.2 What are the contact details for the program? (in case we need to find out more about the program)

8. Thinking about quality of VET provision: what do you think will contribute most to the improvement of the quality of VET provision over the next five to seven years?

9. Other comments

APPENDIX 2

Delphi Survey of Key Stakeholders Round 2

Ref. no . . .

Question 1: Nominate five critical challenges which you believe will be faced by VET teachers/trainers over the next five to seven years.

The table below indicates the categories and response numbers derived from Round 1 responses. We now ask you to select the seven most important challenges and to rank them. You have the opportunity to select one more and include it in your ranking, if you wish.

CHALLENGES	Number of responses from survey no. 1	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Operate in competitive market	11		
Pace of change	10		
Use of technology	10		
Flexible delivery	9		
Keeping up to date/understanding changes to VET	9		
Understand/work with training packages	8		
Globalisation of VET & the economy	7		
Maintaining their own employment/career pattern in insecure times	7		
Keeping up to date with industry trends	6		
Understanding of dilemmas in educator's role (such as industry needs vs. education)	6		
Understanding changing nature of work	5		
Competency-based assessment	5		
Changing client groups	4		
Changing to role of facilitator	4		
Delivering training in the workplace	4		
Balancing 'real' requirements of industry with what the VET system tells teachers are industry's requirements	3		
Greater accountability/quality issues	3		
Work intensification	2		
Learning how to develop themselves	2		
Meeting industry needs	2		
'Growing' the training market, ie increasing demand for VET	2		
Shortage of teaching skills	2		
Customer focus	2		
National market in VET	2		
Other (please specify)			

Question 2: How well prepared currently are VET teachers/trainers to face these challenges?

In their responses, participants in the first round generally indicated their belief that only a minority of VET teachers/trainers was well prepared to meet the challenges identified in question 1. Responses varied slightly between different challenges.

We now ask you to rate teachers'/trainers' preparedness for the seven challenges you have chosen.

Note: You don't need to write the challenges in; just use the seven you picked as most important, in the ranking you chose. (So, for example, if you chose 'work intensification' as your first-ranked challenge, put your rating of teachers' preparedness for work intensification opposite number 1.)
Rating scale :

1 On the whole not prepared.
2 Only a minority prepared.
3 Some well prepared.
4 Majority well prepared.
5 On the whole very well prepared.

Challenge (your choice of the 7 most important, from Question 1)	Rating of VET teachers'/trainers' preparedness
1	
2	
3	
4	
5	
6	
7	

Question 3: How useful are the following sources of training and development in helping to deal with these challenges?

The responses to this question from Round 1 are given below. Please give your rating, which you may or may not wish to revise from your previous response. We also give you the opportunity to add, and rate, up to two new sources of training/staff development. **Give ratings of 1-5, 1 being not useful and 5 being extremely useful.**

Rating Sources of training	1	2	3	4	5	Your rating
'Initial' Teacher Training at University	4	8	5	7	5	
Certificate IV in Workplace Training	6	8	8	7	0	
Nationally funded training e.g. Framing the Future	4	6	7	9	3	
"In-house" formal program training	1	7	14	6	1	
Informal on-the-job training by providers	4	6	10	7	1	
Other (please specify)						
Other (please specify						

Question 4: What do you consider are the essential attributes, skills and knowledge currently needed by VET teachers/trainers?

In each section of question 4 we present the categories which arose from Round 1 of the survey. We ask you to tick the seven most important, in your view, and to rank them from 1 (most important) to 7 (least important). We also give you the opportunity, in each case, to add an extra category if you wish.

For each section of question 4, we ask you to say how far you think VET teachers/trainers, in general, currently possess the attributes/skills/knowledge/capabilities you have identified as the 7 most important.

4.1: Attributes

Attribute	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Accept/cope with/predict change		
Flexibility/adaptability		
Tolerance/sensitivity to student needs		
Professionalism (includes taking responsibility for updating knowledge)		
Problem solving/lateral thinking		
Passion for teaching		
Entrepreneurial		
Commitment to equity and social justice		
Willingness to work with others		
Customer focus		
Reflective		
Leader/facilitator		

Able to take initiative		
Critical attitude to government policy		
Explore/be curious		
Creative		
Other (please specify)		

Question 4.1a: Do VET teachers, in general, currently possess that characteristic?

Rating scale :
No
Possibly
Yes

Characteristic (your choice of the 7 most important, from Question 4.1)	Rating
1	
2	
3	
4	
5	
6	
7	

4.2: Skills

Skill	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Delivery/teaching		
Technology		
Develop customised programs for industry		
Assessment		
Industry/subject expertise		
Operate confidently in workplace setting		
Facilitation		
Organisational/managerial		
Marketing		
Flexible delivery		
Negotiation		
Searching/research skills		
Other (please specify)		

Question 4.2a: Do VET teachers, in general, currently possess that characteristic?

Rating scale :
No
Possibly
Yes

Characteristic (your choice of the 7 most important, from Question 4.2)	Rating
1	
2	
3	
4	
5	
6	
7	

4.3: Knowledge

Knowledge	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Learning principles/learning styles		
Industry knowledge		
National Training Framework/Training Packages		
Competency standards		
Political/economic factors that could impact on VET (bigger picture)		
Labour market and where it links to VET		
Lifelong learning		
Knowledge of educational theory in order to evaluate policy changes		
Other (please specify)		

Question 4.3a: Do VET teachers, in general, currently possess that characteristic?

Rating scale :
No
Possibly
Yes

Characteristic (your choice of the 7 most important, from Question 4.3)	Rating
1	
2	
3	
4	
5	
6	
7	

Question 4.4: What do you consider are the essential competencies and capabilities currently needed by VET teachers/trainers?

This question gave respondents the opportunity to answer questions 4.1, 4.2 and 4.3 in an holistic manner instead of answering each of questions 4.1 to 4.3. Some participants chose to answer 4.4 in addition to 4.1, 4.2 and 4.3. We are aware that there is some overlap between the four parts of question 4, but nevertheless hope you will answer all parts, as there do seem to be differences in the categories.

Competencies and capabilities	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Industry experience/knowledge		
Teaching/delivery skills (including flexible delivery)		
Deal with students as individuals		
Analytical/critical/lateral thinking		
Change management		
Self-management skills		
Flexibility		
Management/leadership skills		
Higher industrial qualifications		
Provide support to students i.e. listening, counselling, mentoring		
Learn in an ongoing way		
Communication skills		
Teaching embedded generic skills		
"Dual professionalism" (content area and teaching)		
Other (please specify)		

Question 4.4a: Do VET teachers currently possess that characteristic?

Rating scale :
No
Possibly
Yes

Characteristic (your choice of the 7 most important, from Question 4.4)	Rating
1	
2	
3	
4	
5	
6	
7	

Question 5: What additional attributes, skills and knowledge do you think will be required over the next five to seven years?

This question was designed to get at respondents' views about the new and developing competencies and capabilities that VET teachers and trainers might need in the near future. As you see, a number of slightly different categories emerged in this question. We now ask you to choose the 7 most important, rank them, and then, in question 5a, to say whether you believe VET teachers/trainers currently possess each of those characteristics.

Attributes/skills/knowledges for the future	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Technological knowledge		
Adaptability		
Project management		
Working in partnership with industry		
Marketing		
Creativity/imagination		
Responsiveness to individual students' needs		
Tenacity		
Access & manage information		
Brokerage		
Range of delivery methods		
Communication skills		
Other (please specify)		

Question 5a: Do VET teachers currently possess that characteristic?

Rating scale :
No
Possibly
Yes

Characteristic (your choice of the 7 most important, from Question 5)	Rating
1	
2	
3	
4	
5	
6	
7	

Question 6: What do you consider are the main barriers to the development of the attributes, skills and knowledge currently needed by VET teacher/trainers?

In this question, we ask you to choose and rank the seven most important barriers from the categories proposed by respondents in Round 1.

Barriers	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Lack of time		
Funding for staff development		
Lack of management support or expertise		
Aging VET workforce/resistance to change		
Teachers' problems with working with CBT and training reform		
Lack of funding (general)		
National or organisational lack of vision		
VET workforce casualisation/contracts		
Organisational culture does not facilitate staff development		
Constant change		
Lack of incentive/career structure		
Lack of access to staff development		
Lack of access to technology		
Lack of national/State staff development		
Lack of encouragement/incentive for university teaching qualification		
Other (please specify)		

Question 6a: (New question) Do you have any views about how any of these barriers (choose up to 3) might be overcome?

Question 8: Thinking about the quality of VET provision, what do you think will contribute most to the improvement of the quality of VET provision over the next five to seven years?

As with previous questions, we would like you to choose and rank the seven you regard as most important. The categories are those identified by respondents in Round 1.

Categories	Tick the seven most important, in your view	Rank your chosen seven from 1 (most important) to 7 (least important)
Support for staff development/training		
More general funding		
Better management practices		
Management/team vision		
Better qualified VET teachers		
Research		
Recognition of importance of teaching skills		
Quality of teachers		
Funding for staff development/training		
Better wages/conditions		
Training packages		
Increase in status of VET		
Better links between VET & industry		
Quality endorsement		
Clear policy directions		
Rethink relative status of industry/community/individuals as VET clients		
Accountability based on outcomes		
Availability of new technology		
Other (please specify)		

Question 9: Any further comments

A number of respondents supplied extra comments in this section, some quite detailed. The following statements were drawn mainly from responses to Question 9, but also from responses to other questions. We would like you to say the extent to which you agree or disagree with these statements.

SA- strongly agree
A – agree
U- undecided
D – disagree
SD - strongly disagree

Statement	SA	A	U	D	SD
The diversity of VET teachers means it makes no sense to aggregate VET teachers in a survey of this nature					
VET teachers need to develop a 'dual professionalism' - industry and education					
Centres for Teaching and Learning should be established in VET providers					
We need to maximise and build on teachers' personal strengths					
Professional development should be put into the universities because VET teachers should be allowed to stand back from the tensions and confusions of the workplace					
Teachers need to be good 'bullshit detectors' to see behind the policy rhetoric					
Teachers are having to develop their own human capital through professional development, especially casual staff					
Teachers have to balance their own local industry's needs and wants with curriculum derived from ITABs, which don't represent 'real industry'					
Many PD programs are about getting teachers to toe the policy line					
Few people have any conception of what VET will be like in the future - even the short-term future with RTOs and Training Packages					
There will be a move from teaching to assessment					
We need more opportunity for teachers to share their practice with each other					

10: Would you be willing to participate in a third round of this survey? Yes/No

Name...

11. Any other comments

Please add any other comments you wish relating to VET teachers/trainers and their development.

RESEARCH INFORMING PRACTICE: INSTRUCTIONAL DESIGN FOR WORKPLACE LEARNING

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ABSTRACT

The research described in this paper is still in progress. The paper takes a critical stance on the development of instructional materials and methodologies to support flexible delivery, and argues that quality client centred flexible delivery requires data to be generated on the learning preferences and context of learners in the workplace.

Early research data indicates that there can be some confidence in the development of training materials and methodologies that are based on client learning preferences.

Learning Preferences and the Construction of Knowledge

Although there has been widespread acknowledgment in Australia and overseas that flexible delivery has a major contribution to make to education and training, Sadler-Smith (1996) has been able to accurately observe that the designers of instructional materials to support flexible delivery still assume that learners are "by and large uniform" (p185). The same comment was made earlier by Riding, Buckle, Thompson and Hagger (1989, p.393) when they wrote "In designing training materials there is often the assumption that all trainees learn in a similar manner". Additionally, Mitchell and Bluer (1997), in an Australia wide study of the use of new technologies observed, somewhat depressingly, that in the VET sector it had been "...difficult to find eight reasonable coherent and illuminating case studies" (p2). In investigating the small number of case studies where planning had been effective, Mitchell and Bluer gathered data on student response to the methodologies. They concluded that the effectiveness of the new methodologies was related to a number of variables, including the characteristics of individual students and student groups. There was no evidence for the implementation of the Sadler-Smith (1996) suggestion that the learning styles and preferences of learners be considered part of a sophisticated training needs analysis. Sadler-Smith has suggested that an 'adaptive' approach to training design and delivery is one that tries to customise content and delivery to learner needs and preferences, while a 'non-adaptive' approach, rather differently from what the term implies, is one that comprises several different approaches to the learning task such that the learner can self select on the basis of cognitive preference. He suggests that a practical and cost efficient paradigm for the design of learning programs through flexible delivery is to generate the alternative approaches on the basis of typical client preferences, to yield a range from which the client can choose. Studies by Vermunt (1995) and McGregor and Quam (1996) have shown, however, that although learning is enhanced through instruction based on learning preferences, learners are in fact not particularly adept at recognising their own preferences and, in turn, are not good at choosing learning methodologies that best suit them.

Sadler-Smith's contention that there is a need to cater for learning preferences in the design of training is supported by evidence from a number of studies. For example, Kennington, Sitkolutek, Rakowska and Griffiths (1996) showed that the development of management training for Polish managers was enhanced through knowledge of their learning styles, while Lenehan, Dunn, Ingham, Signer and Murray (1994) showed statistically higher learning performance among nursing students when instructional methods were based on their identified learning preferences. Reushle (1995) writes that focal to the task of designing hypermedia courseware is knowledge of the learners - their learning styles, prior knowledge and the context for learning.

There is also the view expressed in the literature (eg. Gregorc, 1979; Kolb, 1984; Cleverly, 1994) that teaching methodology focussed on preferred learning styles ultimately disadvantages the learner since it fails to develop in them adequate responses to other forms of instructional delivery. That view is recognised as valid and useful in the context of educational institutions but, in an industrial setting where the primary interest is in the work performance resulting from training, a desire to contain training costs, and a strong interest in returns on training investment, it is unlikely that there will be strong interest in the development of learning styles and preferences as a remediation exercise.

Additionally, the literature displays confusion in the conceptualisation of such terms as 'learning styles', 'learning preferences', 'learning strategy', 'cognitive strategy', and 'cognitive style'. In this presentation there is not time to unpack those issues, but the larger research project that we are currently undertaking intends to place some emphasis on those conceptualisations.

There is also considerable evidence in the literature that flexible delivery of training that is reliant almost entirely on the disembodied use of learning materials, be they print, video, CD ROM or on-line, is likely to have little success in terms of quality learning outcomes.

For learners to effectively progress from the novice to the expert stage (see Dreyfus, 1992) requires the development of knowledge that DiVesta and Rieber (1987) have identified as flexible, durable, transferable and self-regulated, leading to understanding that provides for material to be assimilated and integrated into the learner's knowledge structure. The need for this level of understanding in the development of workplace knowledge is repeatedly commented upon in the literature (eg. Glaser 1982; Kidd 1987; Ryder and Redding 1993; Redding 1995) as necessary in an age of increasingly complex workplace tasks and equipment. Socio-cognitive constructivist theory provides that such learning is achieved through the learner taking responsibility to construct meaning through self-dialogue or dialogue with others. Billett (1996, 1998) has reviewed the literature and research available on workplace learning (or 'situated learning') and concludes that knowledge in the workplace is co-constructed through the operation of cognitive structures and socio-cultural events and that this co-construction involves the presence in the training context of human interaction where the knowledge to be acquired includes conceptual development.

The research project currently under way intends to not only investigate the learning preferences of enterprise based learners, but also to identify the cognitive processes that they use in constructing knowledge from flexibly delivered, resource based training programs. This research is designed to provide information to assist client friendly training materials and flexible delivery strategies.

Informing Practice through Research

The larger research project we are currently undertaking has been the result of a sense of frustration and inadequacy on my own part when my job was to design flexible learning materials for students enrolled in a TAFE institution. With my original training in psychology, I was interested in individual differences in information processing, cognitive style, and learning styles and preferences, but it seemed to me we never took much account of that in our design of learning materials. We were not in position to take a sophisticated, or differentiated, approach to the development of training materials that did take cognitive differences into account simply because we didn't have the necessary data. We developed our materials in the same way that Sadler-Smith (1996) and Mitchell and Bluer (1997) were to criticise. We just assumed that one size fitted all.

A colleague and I competed for and won a research grant to enable us to research the learning preferences of TAFE students. That research used the standardised Canfield Learning Styles Inventory, which yields quantitative data on 16 subscales of preference, grouped into Conditions of Learning, Content of Learning and Mode of Learning. A total of 570 TAFE students were tested, 294 males and 276 females, across a range of TAFE programs. The research data indicated differences between the genders and between part-time and full-time students and, most importantly, considerable differences between program groups (see Smith and Lindner, 1986). The results of that research are too complex to develop in this paper but, in summary, the program data showed that students tended to group themselves fairly accurately. For example, students in the caring professions showed preferences for content consistent with their program, and modes of learning that were more interactive and qualitative. On the other hand, students in the technical and apprenticeship programs tended to prefer working with things rather than people, to be less concerned with the human relationships formed as part of the learning process, and to prefer quantitative content.

For these results to be useful for instructional decision making, they clearly had to be reliable. In other words, if we replicated the study, would the same client groups show the same characteristics, or would they be different? If there were large differences in replication of the study, the use of the results would be highly questionable. With one thing and another, I didn't get around to replicating the study until 1994 at which time I re-tested the program groups (or their updated equivalents where programs had changed), and was stunned by the similarities with the 1986 finding for each program area. In 1994 we tested 547 TAFE students.

Figures 1, 2 and 3 show examples of the closeness in the similarity between the 1986 and the 1994 data, subscale by subscale, for:

- Electrical Mechanic Apprentices
- Office and Secretarial students
- Sheetmetal Apprentices.

These relationships between the 1986 and 1994 data were developed for all seven programs compared but, in a conference paper such as this, it is not possible to show all seven graphs. Of the three chosen for portrayal here, the Electrical Mechanics data and the Office and Secretarial data typify the closeness of the comparison for six of the programs groups, while the Sheetmetal Apprentice data is shown since it is the group exhibiting greatest variation between the two years.

In reading the graphs in Figures 1, 2 and 3, it needs to be recalled that the Canfield is a ranking test. Therefore, the lower the mean score, the more preferred is that subscale.

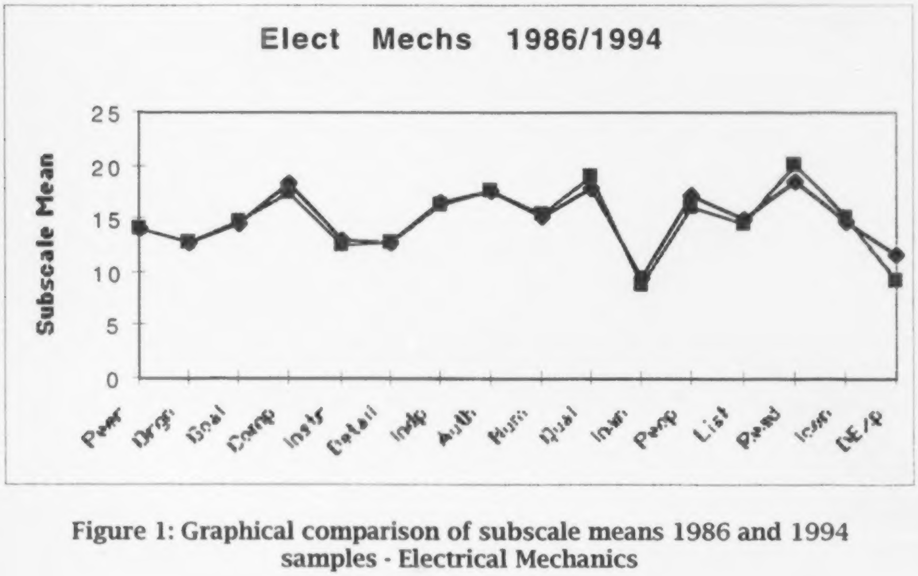

Figure 1: Graphical comparison of subscale means 1986 and 1994 samples - Electrical Mechanics

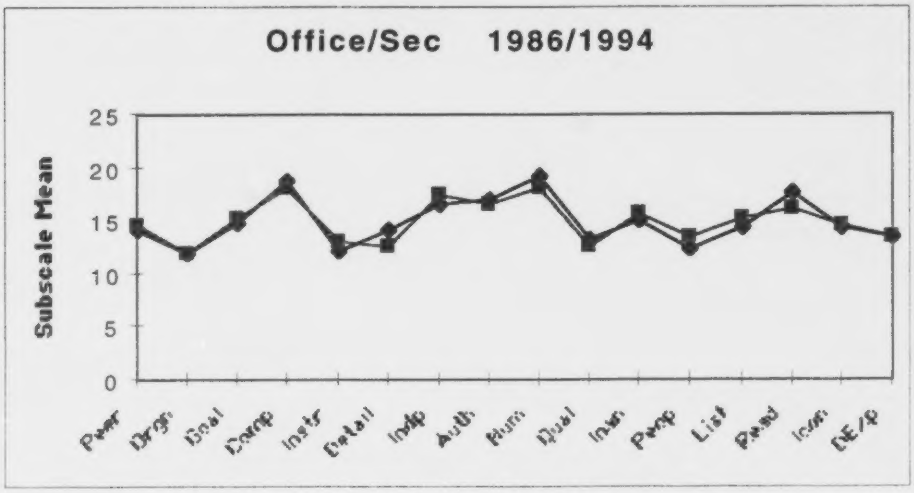

Figure 2: Graphical comparison of subscale means 1986 and 1994 samples - Office and Secretarial

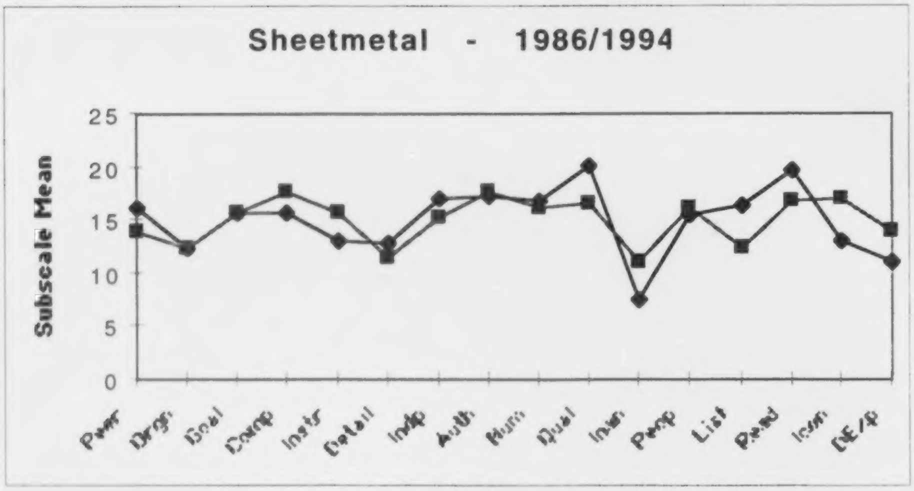

Figure 3: Graphical comparison of subscale means 1986 and 1994 samples – Sheetmetal

Clearly, I was on to something, with these results compared across so many intervening years, indicating reliability in the findings, and the possibility of making reliable instructional decisions being the result.

As part of an early attempt to develop a VET learner typology, in the 1994 study I conducted a factor analysis (varimax solution with orthogonal rotation) across all data for all students tested. That factor analysis was heartening with strong subscale loadings on three identifiable factors which were, even more hearteningly, consistent with what common sense would suppose. A fourth factor was identified with a smaller number of subscales loading on it, and rendering it possibly unstable. The four factors were:

Factor 1: Textual - Non textual
(Eigenvalue =2.48; variance accounted for = 15.5%)

This factor indicates that students spread along a dimension of strongly preferring content that is textually based and learning from text to, at the other end of the dimension, learning about physical objects from direct hands on experience.

Factor 2: Independent Learning
(Eigenvalue = 2.13; variance accounted for = 13.3%)

This factor indicates students were spread along a dimension which at one end comprised a strong preference for independent learning and, at the other end, a strong preference for learning in a collegiate context with other students and the instructor.

Factor 3: Content of Learning
(Eigenvalue = 1.88; variance accounted for = 11.8%)

Students were spread along a dimension that, at one end, involves a preference for content associated with people and/or qualitative issues while, at the other end, there is strong preference to work with numbers and/or objects.

Factor 4: Organisation of Learning
(Eigenvalue = 1.69; variance accounted for = 10.6%)

At one end of this dimension students are characterised by a preference for a well detailed program with learning and assessment tasks laid out for them. At the other end students preferred to set their own learning goals. This factor is not as strong as the first three, with only three Canfield subscales loading significantly on it. Additionally, a negative loading on the Independence subscale was weak compared to strong positive loadings from the Organisation and Detail subscales. The factor is, therefore, considered to be relatively unstable.

I can find no equivalent research with learners in enterprise settings. The current research project aims to begin providing such data for learners in such settings. The results from the TAFE students have clear practical application in terms of the methodologies used to provide learning programs through flexible delivery.

First, Factor 1 provides empirical evidence that, indeed, one size does not fit all in the design of learning materials. There are significant differences between learners in the ways in which they prefer to receive information, and client focussed learning systems will need to provide a variety of learning media at least between different learner groups, and possibly within the different learner groups. This view is consistent with Sadler-Smith's (1996) notion of adaptive and non-adaptive learning systems. Second, Factor 2 provides the evidence that not all learners are the same in their requirement for instructor support in the context of flexible delivery and while some learners have little apparent need for instructor support, others need it and want it. In terms of Billett's (1996, 1998) observations about construction of knowledge in the workplace, this result implies that the level of support required differs between learners. Factor 3 probably has little that is new to assist in the development of workplace flexible delivery, since the result is most likely a function of the different program groups used in the research. Factor 4 indicates a dimension whereby students preferences are strongly related to the level of organisation provided in the program of learning, and the amount of detail they are provided with on such things as expected outcomes and assessment.

Just prior to this conference we have started to much more closely analyse the data for the 389 apprentices in the total sample of students tested. Although the intended analysis is much more sophisticated, at this stage the rank ordering of apprentice preferences for each of the Canfield subscales is interesting. Table 1 shows the rank ordering by mean of each Canfield subscale for the apprentice group, organised under the headings of the major scales of the Canfield.

Table 1: Canfield Subscales ranked by mean within major scales - Apprentices only

Subscale Rank Order	Mean
Conditions of Learning	
Organisation	12.76
Detail	13.10
Instructor	13.24
Peer	14.16
Goal Setting	14.73
Independence	15.83
Authority	17.78
Competition	18.09
Interest	
Inanimate	10.99
People	15.14
Numeric	16.85
Qualitative	17.15
Mode	
Direct Experience	12.49
Iconic	14.22
Listening	14.86
Reading	18.20

This simple ranking of the subscales in order of preference provides further insight into, and confirmation of the factor analysis. First, the strong preference for Direct Experience in comparison with the low preference for Reading indicates that apprentices fall towards the Nontext end of the Text-Nontext dimension identified by the factor analysis. Second, the ranking indicates that Independence and Goal Setting are placed lower than Peer and Instructor, indicating that apprentices tend towards the dependent end of the Independent Learning dimension identified. Content of Learning was also identified as a dimension in the factor analysis, and the means associated with People/Qualitative and Numeric/Inanimate content would indicate a tendency for apprentices to spread more widely along that dimension. Finally, the high ranking of the Organisation and Detail subscales indicates that apprentices lie at the high end of the Organisation of Learning dimension identified in the factor analysis.

Applications to the Workplace

The research with students provided confidence that learning preferences were stable within identified learner groups; and the literature on the matching of learning preferences to instructional design and method gives confidence that positive results can be derived from that matching. Additionally, it is argued that enterprises are faced with choices on how to develop their training resources, how to organise delivery, and how best to deploy their training dollar. Selection of training provider, resources and methodologies in the context of the new Training Packages is an issue for enterprises with which they have to engage. It is intended, therefore, to apply the same research paradigm to enterprise based learners to identify learning preferences. However, to make effective use of the preferences data for enterprise learners, data is also required on the ways in which enterprise based learners construct knowledge in the workplace. This demands data to be generated on the cognitive strategies used in the workplace to construct knowledge, and the behaviours that workers engage in to assist in the knowledge construction. It is expected that the research will take place in three different enterprises.

The learning preferences data will be obtained through the use again of the Canfield Learning Styles Inventory since it has been used in our previous research, and has good technical data in terms of subscale reliability and validity. The only negative aspects of the CLSI are that it is a rather expensive instrument to purchase, and the ipsative nature of the data it generates needs some care in interpretation. Data from the CLSI will be used to identify common learning preference patterns. Biodata and occupational data will also be collected from participants to enable relationships between learning preferences and other variables to be identified.

The data relating to the use of flexible delivery materials and methodologies in the construction of knowledge will be collected using the 'stimulated recall' methodology employed by Marland, Patching and Putt (1992) in their study of the ways in which distance education students use the learning materials provided to them. Marland *et al* videoed students as they worked with their materials and subsequently used the video to stimulate recall by students of their cognitive processes as they worked.

In the current research it is not intended to use video for two reasons. First, it is an unnecessarily contrived mechanism in the current study and, second, it is inappropriate in an industrial setting to quarantine learners from the work environment. In the intended research stimulated recall will be achieved by interviewing employees very soon after they have completed the training program, with recall stimulated by working through the learning material with them. In that way, the study will not just identify the cognitive processes used as learners worked with the materials, but will identify other socio-cultural processes used to construct knowledge such as discussion with, or observation of, a more expert worker, or the use of experimentation and problem solving on the equipment in the workplace. It is intended to interview eight learners from each enterprise.

The research then intends to involve management and operator personnel to develop a set of models for the features of learning resources that best fit the learners in the enterprise, and a set of methodologies appropriate to the construction of knowledge in that workplace. These models form the applied outcomes of the research project, and will inform enterprises on the methods through which flexible delivery can most effectively be employed to achieve desired training outcomes.

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INTERNET DELIVERY FOR VET SECTOR STUDENTS AT UNISA

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ABSTRACT

Distance education students in a B. Ed (In-service) Education and Training of Adults strand, traditionally serviced by standard distance education techniques, including print media and telephone conference, were offered the opportunity to participate in a new learning experience using the Internet.

A team of academics and IT staff modified a set of management subjects to run on a dedicated web page. The text-based materials were still distributed to students in advance, and an initial telephone conference was used to describe to students how the Internet delivery would be used, particularly the threaded web chat page. Written information was provided to assist students to access the Internet and the dedicated web page.

Initially, students were reluctant to comment on the chat page and then, very slowly and prompted by examples of hyper-linked web resources, questions and ice-breakers from the academic staff, responses started to appear. An initial web conference was scheduled for local and international students and students finally began to discuss questions among themselves and offer help to one-another. This was what the team had been waiting for, but it had been a long time coming!

Introduction

Late in 1997 several VET-sector distance education students had indicated a desire to undertake a Summer School of two to three weeks to complete a suitable subject during the New Year break, using mainly electronic delivery. These students were enrolled in the Bachelor of Education (In-service) in the Education and Training of Adults strand and typically comprised industrial trainers and senior training officers, TAFE instructors, nurse educators, armed services training personnel and adult and community educators. For a variety of mainly technological reasons this Summer School did not eventuate but the methodology was used during Semesters One and Two of 1998.

The idea of using electronic delivery in addition to more traditional methods of delivery was examined by the team and it was decided to run with it during 1998. To this end a variety of teaching and learning strategies was examined and the use of the Internet and email was considered to be a central focus of the program.

Khan (1997, 6) defines web-based instruction as '...a hypermedia-based instructional program which utilises the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported.' The key point in this definition would seem to be the '...meaningful learning environment...' which may, or may not, be achieved in practice. To provide additional support in the light of Khan's comments, traditional course materials were to be issued to all students so that those who did not have access to the Internet would still receive the standard package, while those with Internet access would have additional benefits.

Students were advised that the program was really a pilot program for the purposes of research into identifying more innovative and effective teaching and learning methodologies. They were given the option of enrolling under a purely distance education program or, and in addition to this, utilising the Internet. The subjects chosen to be presented in this pilot scheme were Management Studies A (Part 1 and Part 2) over two semesters.

Background

The University of South Australia, formed in 1991, and its predecessor organizations comprising teachers colleges and institutes of technology, delivers its course offerings both on-campus and by distance education. The School of Education provides a limited program in human resource development education, education degrees at various levels, and programs specifically designed for adult and vocational educators. Approximately two-thirds of the education and training of adults student body undertake all, or at least a major part of their studies, in the distance education mode and are situated throughout Australia and overseas.

Two academics comprising the author and a colleague, Fiona Underwood from the Adult and Vocational Education group of the School of Education, discussed what might be appropriate teaching and learning strategies to best meet the needs of students in existing subjects, when facing ever-decreasing resources and limited time. The two academics consulted a contract information technology lecturer and an information technologist for ideas.

This paper examines the processes used in the exercise; comments on outcomes; suggests areas for improvement and makes recommendations regarding the role of training for both students and staff members.

The Process Used

The web pages of other organizations were explored for ideas on presentation, content and delivery. The team wanted guidelines on 'best practice' internet teaching, but this was very difficult to detect from either the literature or the internet itself. As noted by Bannan-Ritland, Harvey, and Milheim, (1998, 77), '... many educators still believe that the mere use of this medium constitutes an engaging learning experience.'

In many instances an institution might place a subject outline and some background information on to a home page. At other times, the entire print material package might be loaded onto the web site for students to print off the materials. The UniSA team wanted to make inter-activity a major aspect of the program using as much staff to student, student to staff and student to student interaction as possible, but the methods noted above did not involve an interactive approach.

Visits were also made to some local and country educational institutions to see what flexible delivery methodologies were in use, but again, interactivity using the internet was not a component of the programs viewed. Furthermore, as noted by Bannan-Ritland et al, (1998, 77):

> While the Web can certainly be a powerful medium for instruction and an appropriate delivery vehicle for crucial course-related information, significant confusion still exists regarding the mix of potential media elements available in Web-based instruction as well as its overall potential for learning.

Despite the team's intentions to use a variety of media, no sure certainty could be entertained regarding the effectiveness of overall learning outcomes.

Team members discussed various possible approaches that would focus on inter-activity as a major teaching and learning strategy. The usual flexible delivery methods of the University were to be retained (see for example, Snewin, 1996) and Internet delivery was to be in addition to these using a 'threaded web discussion' page. With this approach, both staff and students could place items on to a web page for others to read and respond to (Snewin, 1998a).

The first student response arrived: "Greetings from Bonnie Scotland". Encouraged by this sudden activity, the team placed questions, advice on assignments, hyper-linked Internet resources, and specific subject content information on to the web page and waited, and waited, and waited for students to respond.

Apart from the energetic and Internet conversant Scot, himself an ex-teacher from the VET sector, it was some days before another student, a self-proclaimed internet expert from the VET sector responded from interstate.

Very slowly, one by one, students began to respond on the discussion page with comments like 'Hello, I've managed it!' There was not, however, any sign of student to student interaction and no responses to the questions and comments put forward by staff on the web page. Wild (1996, 49) supports these findings on the inadequacies of Web interactivity:

> ...the provision of intrinsic and meaningful feedback using the Web is especially problematic - in this sense, the Web is not truly interactive and has no specific goal outside the goal constructions imposed by the learner.

Outcomes

Students were extremely reluctant to make comments on the Internet, but apparently used the hyper-linked Internet resource materials and answered the questions in a written form - but not on the discussion page! Some students telephoned to discuss the questions and others made comments about difficulty in using the Internet.

A student living in Singapore began using email to respond to questions. When asked why she did not respond on the web page, she said she preferred to interact on a one-to-one basis. This claim supported earlier research findings by the author (Snewin, 1994) where distance education students, in general, preferred individualised contact with their lecturer and preferred not to share that person with other students.

A joint Australian/American evaluation (Day, 1998) also discovered that students were equally reluctant to participate in two-way web presentations. Similarly, while presenting a paper in Penang, Malaysia recently (Snewin, 1998b), feedback from the audience indicated that those using the internet for interactive subject delivery were also experiencing student participation problems. Despite much prompting and cajoling, the UniSA team members could not achieve acceptable student to student internet interaction.

Towards the end of the semester, a web conference was organized and during this conference, students slowly began to chat to one-another as they would normally do during a telephone conference. They offered advice, assistance and support to one-another and a genuine interactive approach developed. The team was delighted and evaluation by participating students indicated that they had enjoyed the trial of the subject on the Internet, and were looking forward to other subjects being made available on the web in semester 2.

Staff Development Implications

The team reviewed the outcomes of the exercise and decided that both students and academic staff members needed to have some prior training and ongoing support if the use of the Web as a teaching/learning medium was to be effective. To this end, the following recommendations were formulated.

Recommendations

Recommendation 1

Participating students should be provided with written instructions on how to use Web-based teaching learning materials.

Recommendation 2

A telephone conference to be standard practice prior to the use of Web-based instruction to allow for better student to student and staff to student interaction.

Recommendation 3

Educational staff members moving in the direction of greater use of the Internet for both subject delivery and access to international resources, need training time.

Recommendation 4

Any program utilising the Internet needs to be transparent in its operation, lacking in complexity, and with all necessary commands being intuitive and/or clearly prescribed.

Recommendation 5

In the case of software, far too often academic staff members are provided with the latest version of a program when they were not really proficient with the earlier version. Therefore, greater consultation should occur between IT staff and academic staff to inform on compatibility and new version features, before any changes are implemented.

A thought for the day

Academics in today's universities do not have the luxury of unlimited time to stumble along the Internet learning curve.

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WHAT'S HAPPENING WITH VET IN SENIOR SECONDARY SCHOOLS?

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ABSTRACT

DETYA funded the Vocational Education and Assessment Centre to conduct research investigating the integration of vocational education and training (VET) and general education within a number of senior secondary schools throughout Australia. Significantly, the project employed **process benchmarking** as its primary methodology and this approach is discussed in detail in the paper.

Introduction

The Vocational Education and Assessment Centre was contracted to carry out the above research for DETYA's School to Work Section. A unique feature of the VET in Senior Schools research was the process benchmarking focus of the methodology. Benchmarking involves processes where organisations compare and contrast their practices and programs with similar organisations in order to identify good practice, with the goal of continuous improvement.

In the VET in Senior Secondary Schools Project, this took the form of progressive visits to each participating school to examine their system by collecting data for verification and comparison from teachers, students, workplace employers/supervisors and industry representatives. This involved the researcher and one teacher from the previously researched school visiting the next school on the list.

Teachers became co-researchers and were able to compare their own VET programs with those from the visiting teacher as well as against the school/college they visited. The process benchmarking methodology initiated and promoted ongoing developmental dialogue between leading edge practitioners within VET in schools. It is also a methodology which proved capable of promoting collaborative, action learning frameworks for conducting research (with the broader benefit of enhancing the profile and research skill base of those VET practitioners involved in the process).

A case study approach was adopted because of its ability to provide detailed insight into a range of issues involved in providing vocational education and training in senior secondary schools and colleges.

A mixture of quantitative and qualitative data collection methods (surveys, focus groups and structured interviews), using a theory-building model, were employed in conducting the case studies.

One hundred and seventy seven student surveys were completed and thirty nine VET teachers were surveyed. Approximately 6 vocational teachers at each school were also interviewed. A number of workplace supervisors were interviewed at each site and fifteen supervisor surveys were also completed at three sites. As all surveys were delivered, completed and returned during school visits, the response rate was 100%. Surveys were designed, coded, entered and data analysed using the survey design and analysis package Pinpoint.

The schools involved in the case study research are listed below:

School name	Type & Size	Is school RTO?	Has a VET Coordinator?	VET embedded?	Traineeship offered?
Erindale College, Wanniassa, ACT	Senior College 910 students	Yes	Yes Part time	Yes	No
James Harrison College, Geelong, Victoria	Years 7-12 370 students	Yes	Yes 3 hrs per week	Yes	Yes
Claremont Senior Secondary College, Hobart, Tasmania	Senior College 950 students	Yes	Yes Full Time	No	Yes
Paralowie R-12 School Adelaide, SA	Years R-12 1,230 students	No	Yes 3-4 hrs p.w.	Yes	No
Cluster of Kwinana, Rockingham & Safety Bay Senior High Schools	Years 7-12 Kwinana 970 Rockingham 1060 Safety Bay 1124	No	Yes Full time for cluster	No	Yes
Centralian College Alice Springs, NT	Senior College 202 in VET	Yes	Yes	Yes	No
St Edmund's & St Mary's Colleges, Ipswich, Qld	Years 7-12 1,300 combined	No	Yes Full Time over both Colleges	No	Yes
Bradfield College Crows Nest, NSW	Senior College 640 students	Yes	Yes Full time	Not yet but coming soon	Yes

The research was conducted throughout 1998.

Process Benchmarking Approach

Process benchmarking is a relatively untried action learning approach when placed alongside case study research, as it was in this project. How this was done, together with feedback on the process from practitioners, is outlined below. Teachers involved in process benchmarking say they learned a great deal which has benefited and improved their own practice and the VET programs in their schools. Their learning is also included.

1 STRUCTURE

Pre-visit

Each of the eight case studies involved in the project (one case study in each state/territory) was asked to designate a key contact person who was closely involved in the school-to-work program. This person had the primary involvement in the benchmarking activity and functioned as a "co-researcher" to the VEAC researcher.

All teachers were provided with detailed information about the project, the structure of the visit and their role as both host teacher and co-researcher. Information on being a co-researcher included the following guidelines:

> Part of every teacher's work involves research. In a process such as this, it is helpful to document the particular skills we will use. Generally, the type of skills required for anyone conducting research are:
>
> a genuine interest in the research area
> empathy and sincerity, to make respondents feel at ease
> listening skills - not doing too much of the talking
> questioning skills to encourage respondents to talk freely
> maintaining confidentiality
> keeping to the interview questions, to enable comparison of data
> impartiality / an ability to keep one's own bias aside. It is not the researcher's role to make judgments about the values and beliefs of respondents
> accurate note taking
> awareness of current issues within the research topic
> adherence to research Code of Ethics (attached)."

School visits

Each school was visited by two people: the VEAC researcher, Ms Carmel Spark, and the co-researcher from the previously researched school. Visits lasted approximately three days. An introductory presentation by the host school initiated proceedings. An overview of existing activities and systems regarding provision of the VET program at the school were presented The visiting co-researcher then presented a brief overview of their school's particular VET program.

The host teacher organised interviews, focus groups and survey distribution with employers and workplace supervisors, VET teachers, non VET teachers, students, external training providers and parents.

On the last day of the visit, a meeting occurred between the visiting researchers, the designated teacher and school managers. It covered observations by the host school of the research process, feedback from the researcher and co-researcher on the school's program and comparisons with other programs. This final meeting ensured the site report would not arrive at the school with any 'surprises'.

Teachers were asked to keep a written record of their reflections after visiting another school as well as any new ideas or changes they may have made to their programs as a consequence of being involved in the benchmarking process.

Post visit

A draft of the research findings for each school was sent to the School Principal and relevant staff for comments and corrections. Schools then received all eight edited site reports.

The final part of process benchmarking occurred when all eight teachers met together in Sydney for a full day to discuss and reflect on issues in VET, what they had learnt from being involved and any changes they had implemented or were planning to implement as a result of the research project. These conversations were taped and are reported on below.

2 TEACHER FEEDBACK ON PROCESS BENCHMARKING

Teachers were unanimously enthusiastic about the use of process benchmarking as an action research method for field practitioners. They made the following comments about what they liked about process benchmarking.

> Going into the other schools was fantastic because we're teachers ourselves. To walk into another school you immediately had a rapport with all the other teachers, and it didn't take very long to understand the problems they were facing, even though you were from a different state and system. I found that really good. Beyond the research question.
>
> Who normally asks teachers and students about these things? This part came across strongly in this project.
>
> The research has helped us with planning and other decisions we have to make. Don't ever have time in a school to do research properly.
>
> In future, we could use each other as consultants. If I've got a particular program I wish to initiate and I know another school is doing it, we could use each other in that way. *(many agreed)*
>
> One of the most important things from the project was gaining the network. Being able to contact other teachers has been very valuable.
>
> I work statewide in Tasmania with a team of 13 other VET Coordinators. I was able to go back and report on what I'd seen and share that information with them. As some of them are new, this was useful. I was also able to share with my college coordinators who had no understanding of the different ways VET is being delivered around Australia.
>
> I like the case study idea of research, the personalisation rather than statistics.
>
> I don't know if I could be working in this area if it hadn't been for the project to give me the impetus to keep going and with realising that so many things are happening in the country and it is an exciting area to be working in, and we are all still breaking new ground as we go.

One teacher described what it was like visiting another school:

> All the time I was reflecting on my own program, my school and it immediately highlighted the differences, strengths and weaknesses, for me. That was going on in my head the whole time.

All teachers agreed that receiving 'warts and all' feedback about their programs via the site report was very useful:

> Having read your own site report, particularly the shortcomings, it was good to see a visitor was able to draw those out. Teachers are not going to tell me. If that was the only thing that came out of it, that you had another view of your own program, it would be worthwhile.
>
> The real value of the research project for us is that we've been going through a process of introspection anyway. I've taken the report on us and analysed some of the issues. It's been incredible from that point of view. At first I had a down because of the 'negativity' that came through. But I stepped back and looked at it differently.
>
> Getting the site reports has been fantastic. And the fact that it's a different context for every school, everyone's problems are different - there are pieces from each place I found really relevant to us. There is a lot of information in the reports and I want to read them in more detail. This whole project to me is going to be so beneficial in planning for the future.

Teachers valued having a day together towards the end of the project to reflect on the process and what they had learnt:

> What's been valuable about today is that this is an excellent sized group. Having a three day school visit and then being able to synthesise it like this is wonderful. I'll get far more out of these than I'll ever get out of a national conference.
>
> This feedback day was good because it forced me to have a look at the reports and to think about them. In the job's we're doing, we have a pile that high to read. As things come up now I'll think 'oh yes, I have something on that' and I'll go back and refer to it. It triggers thinking/matching ideas. Made me reflect, made me make use of it.
>
> It's really motivating being with all these other keen people. Takes you out of your own little box."

Improvements which could be made to the process

While an hour and a half was set aside for the visiting teacher to present their school's VET program, rarely was that much time available. And because the host teacher was so busy organising for the visit, they were not ready to take on board information about another school's program.

> Yes, I was always worried the next interviewee wasn't going to turn up.

Teachers said they would have benefited from having all teachers meeting both at the beginning and at the end:

> You could set up some of the areas you want to have a look at, to give it focus and get a feel for the other schools' programs.

The teacher from the school first visited was disadvantaged by the lack of preparation time (it occurred during the second week of the school year) and by the process being 'tested out' in her school.

The teacher from the last school visited said:

> Being last was an advantage, as our staff really wanted to know what the visiting researchers thought of us. A real live researcher, and someone who had never been there before, told us what they saw, gave us some feedback. Teachers loved it, turned up in huge numbers. We have so many visits about our programs and we never hear anything back. So much has been written about us but we've never read it, never been sent a copy.

Generally, though, all teachers thought the research approach did not really need changing:

> Can't really improve the bit of the teacher visiting you. I think it was a good process - you can't improve the process. You need the pressure on you.

3 REFLECTION ON TEACHERS' LEARNING

At the final meeting teachers reflected on the learning they had experienced from being involved in process benchmarking. Site research reports on each school had been circulated to all teachers before the meeting. Information from these discussions provides valuable insight into the learning that occurred and the subsequent changes to VET practice teachers have made.

Learning involved:

- students had complained that they were required to learn the same type of skills in different vocational areas. "We now put these together in one package called "Information Processing for the Workplace". Once they have done it, they can credit transfer to Hospitality, Business and Tourism."
- One teacher is planning changes to their approach to student counselling, based on what they had learned from the school they visited.
- Another teacher valued learning about one school's student support program:

> I liked the mentoring program at James Harrison. 600 of our students do VET courses so it's easy for them to get lost. Good to follow students through and would like our College to address this in the near future.

- Teachers who had been interested in part time traineeships learnt "how to go about it, as well as the pitfalls" during visits to other schools:

> There are so many issues to get the traineeship up and going that we've decided we will proceed very slowly as we'll only get one opportunity. So it was excellent that I found out about related aspects.

- In one school cluster where the Hospitality traineeship had difficulty finding placements they are now looking at employers with students as part time staff and asking if they would be prepared to take them on as trainees and have the students trained by the school.
- After reading responses from teachers in her school in the site report, one teacher realised that VET teachers needed a lot more support from the school:

> VET has been imposed, our teachers have not been guided correctly or given enough support. They haven't been given the breathing time. They were secondary teachers who were told "this is now your job, this is what you will do.

- After visiting schools where VET was delivered in discrete courses, one teacher said:

> Our state has a long history of being opposed to streaming. But it has made me stop and think about why we were doing that, about the advantages and disadvantages of streaming. There is more flexibility in timetabling when you stream re teacher expertise and teams of students in each area. This is so very different to what is happening in my state.

- One teacher thought providing training for workplace supervisors (as in Tasmania) was a good idea and will follow this up.
- One school learnt they needed to improve their log books and will do some more research in that area.
- Teachers learned the importance of developing more partnerships in their local areas:

> I'm impressed with WA community/industry support in Excellence in Education Compact and will work towards this but don't think will ever be as good as in WA as there's a lack of industry around us.

- One teacher learned he needs to develop closer links between the school and workplaces:

> I was leaving this to the regional centre but as of next year I will employ a coordinator with a workplace focus from year 6 to year 12. I can do this because VET curriculum is now mainstreamed and written into job specifications for people.

- One teacher liked the industry advisory groups which Centralian College has and now has two of those operating:

> We are going to use those to coordinate all of our work placements and look at content, industry support and stipulation of what competencies can be delivered on job. Really beneficial.

As can be seen from the above comments, process benchmarking actively contributed to the ongoing improvement of VET practice within the participating schools. Strong and enduring connections between participating schools and skills in reflective analysis has assisted participating teachers to solve VET problems and introduce new ideas into their own VET programs. Further, the approach was of considerable value in terms of encouraging VET practitioners to embrace research as an integral part of their practice. VEAC firmly believes that this promotion and support of "practitioner grounded" VET-based research is an important part of its role.

Summary

Process benchmarking was adopted for this research because we were investigating the 'how' of schools delivering VET. It is a useful method whenever researchers are evaluating VET provision and identifying 'good practice'. Process benchmarking will not only identify good practice, it will encourage it by the quality process of 'continuous improvement'.

ISSUES

The method does cost more if practitioners are going to be fully reimbursed for the time taken to visit another provider, reflect on processes and practice and make changes in their own organisation. Some practitioners may be willing to become part of such a process for the benefits to their organisation, without financial reimbursement.

Conducting pre and post meetings with all practitioners was seen as being very useful by all involved, however with a national project it would be costly to bring people together.

Confidentiality may be a problem with some profit making organisations. They may not want somebody from another organisation copying their 'market edge' processes. However organisations with such an attitude would probably not agree to being involved in VET research in the first place.

BENEFITS

For practitioners:

- structural opportunity to reflect on their practice within a dynamic area of current VET policy
- improvements for both their organisations and their own professional development
- learnt more about research methods and the value of collaborative research in improving practice
- got to visit another school interstate and spend three days assessing their delivery against the schools
- met seven other teachers from around Australia who are also delivering VET
- read full site reports from seven other schools on the issues and strengths of their VET provision.

For the researcher:

- 'credibility' because was with a teaching professional when entering each school
- assistance with data gathering

- teacher contributed to data analysis and to evaluation of VET provision compared to their own school
- all teachers coming together for final day validated the research findings regarding good practice and models of delivery
- opportunity to explore the boundaries and possibilities of a relatively new research approach.

This paper only looked at one aspect of the VET in Senior Secondary Schools project. The many other issues are contained in the report which will be published in early 1999 by VEAC. The executive summary and individual case study findings are located on the project's web site: http://veac.org.au/vetinschools.

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MATCHING RESEARCH METHODOLOGIES WITH ORGANISATIONAL EXPERIENCES: MAKING ROOM FOR HEAD, HEART AND SOUL

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ABSTRACT

I researched those things in organisations that have affected me personally, spiritually and intellectually. I matched my research methodology with my organisational experiences which were chaotic and non-linear. This paper focuses on the methodologies that I used, which are emergent and enabled me to move beyond static models and plans.

> My research and its outcomes
>
> Is any writing original?
> Are these my own thoughts and ideas?
>
> I don't think so
> They came from being with others
>
> From sharing experiences together
> From observing and trying to understand the differences
>
> Perhaps all that I can do is use my own words
> To express what so many of us feel and know.

I have always thought deeply about organisations and their impact on people. More so, as the rapid pace of change and complexity seems to be speeding up and organisations are responding by continual rounds of restructuring. It seemed to me that organisations were becoming more and more out of control, while paradoxically, imposing more and more controls.

I believed that I would be able to find some answers to the problems that I observed, through the theories and models that I was studying. Unfortunately, the gap between the theory that I was reading and the reality that I was experiencing was too wide. So, I began a meta reflection on my work projects and work experience.

The more I researched, the more I became convinced that there were few answers and no 'quick fix' solutions. Think of all the solutions that the experts have given us - and I ask, how much has really changed? I decided that all I could do was share my thoughts with others.

But was this all that I wanted to share? The more I thought about it, the more I realised that I wanted to share what was in my heart and soul and that this is what usually remains invisible and unspoken within organisations.

> I see and I feel
> But the organisation values doing and knowing
>
> I like to question and stretch the boundaries
> But the organisation intimidates me into silence
>
> I love to learn
> But the organisation doesn't always welcome my learning
>
> How can I find a place for me and my heart in the organisation?
> And how can I share my heart with you all?

Two key propositions emerged during my research. The first, is that many critical things remain invisible and unspoken in organisations and consequently untheorised. This usually centres around issues such as love, spirituality and involvement of both head and heart in organisations.

The second, is that there is a need for continual movement and the recognition that this is what occurs all around us, whether we are conscious of it or not. We create a lot of problems for ourselves when we pretend things are static and try to stick to one model, paradigm or process.

As I researched these issues, a number of questions kept resurfacing, questions that kept me passionately involved, but ones that I could not necessarily find 'the answer' to. Despite the body of ancient and modern wisdom and knowledge around and within us, why can't we create the futures we desire so much? We learn a lot intellectually, but why do we have such difficulty in implementing it in practice? Why don't our practices match our theories? Why do we think that by changing plans, skills and outcomes, we can change organisations? Why can't we see that the changes come from relationships and primarily from within ourselves? Why do we increase our focus on controls, when our traditional methods are failing us more and more? How can we resurface spirituality within organisations? How can we make the invisible, visible? Is what I am experiencing with the people I work with, what the whole organisation is experiencing?

I found it difficult to keep researching with so many unanswered questions. However, the questions kept me focused, as I attempted to clarify sources of confusion and despair often felt by people within organisations. It enabled my research to be a "process rather than a product, _ experience rather than work and _ lived rather than done" (Melamed cited in Reinharz 1992, 217 - 218). There were no clear answers and a key paradox that emerged was that even though change depends on learning, learning is not sustaining our change.

Research framework

I researched what it was like
to think, do and be
in an organisation

I explored myself deeply
and called it 'heuristics'
(to keep the academics happy)

I explored in a way that women tend to do
and called it 'feminist perspective'
(to keep my supervisor happy)

I researched in a spontaneous and non-linear way
and called it 'fuzzy logic'
(to keep my examiners happy)

I researched the organisational impact on people
and called it 'human inquiry'
(to keep them all happy)

I questioned theoretical assumptions and designed models
and called it 'grounded theory'
(to keep my research focused)

I justified, wrote, corrected and revised
in a way I'd never have to do
If I wasn't researching at the edge.

I needed to study what I was actually experiencing and observing. According to Reinharz (1984), this is not what researchers usually do. Researchers (including herself, initially) usually follow a pattern of rigid adherence to problem formulation, data collection and data analysis. However, research in the field can be experienced as "an unfolding, ever-changing process" (Reinharz 1984, 150). This is what I experienced during my research process. It created feelings of anxiety and doubt, which needs to be expressed as part of the research process.

We are absolutely sure only of what experience gives us; but we should accept experience wholly, and our feelings are a part of it by the same right as our perceptions, consequently, by the same right as 'things' (Bergson 1992, 212).

In bringing my whole self to the research process, I wanted to work towards what Reinharz (1984, 151) achieved with her later studies, when she developed a "greater sense of identity and trust in [herself ... and could] ignore the mythical rules and work according to an inner set of guidelines that permitted flexibility and change". Shepherd (1993,166) describes this as a nurturing approach to research, as it "allows unconscious processes, the movement of the spirit, and the voice of the soul to speak rather than limiting us to information from only rational sources".

Despite my recurring confusion and doubts, I've managed to remain with constantly changing questions and the confusion this creates. Surely more of a meta learning and meta research journey than the traditional linear approach?

Research paradigms

I selected the interpretivism (constructivism) paradigm (Robottom and Hart 1993) as the one most closely describing the paradigm within which I researched. This paradigm states that "reality exists only within the context of a mental framework or construct" (Robottom & Hart 1993, 9). Through my own mental framework, I viewed my research from a humanist/spiritual perspective. I believed that we have to search for the truth that resides within ourselves and we cannot separate ourselves from the people and events around us. Consequently, I made my own meaning, which can result in knowledge being problematic and everchanging (Robottom & Hart 1993). I continuously experienced this.

As an inquirer working within this paradigm, I aimed "for internal rather than external validity" (Robottom & Hart 1993, 10) and my work needs to be read within this context.

Key aspects of my methodology

My methodologies embraced four interrelated key aspects (see Figure 1): ontology, epistemology methodology and expression. Ontology is about "how things are"; epistemology is about "how we can know something (or perhaps nothing) about the matter" (Bateson 1972, 313 - 314). According to Bateson (1972), it is impossible to separate the two. I experienced this both within my research and within organisations.

Interrelated with ontology and epistemology, is the approach we use to 'find out'. We usually do this through plans and measuring outcomes. However, I chose a non-planned, heuristic, non-linear methodology which impacted on the form of expression I used. Expression is usually verbal, intellectual and linear. There needs to be provision for a wider variety of expression within organisations, to recognise the heart as well as the intellect and to express this in an emergent way.

The enormous diversity of modern thought as we in fact find it around us in every form from

Figure 1: Key Aspects of My Methodology

ONTOLOGY

EPISTEMOLOGY

METHODOLOGY

EXPRESSION

BEING
KNOWING
THINKING

DOING
SAYING

This represents my belief in self, human nature and spirituality and their interconnectedness. We (and everything around us) are in a constant state of fluidity, so the nature of reality as we perceive it, also changes constantly. I am trying to make the connection between how I then think and know. This involves learning about learning and reflecting on how my knowing is constructed. I need to 'find out', through ways that are congruent with fluidity and reflection, thereby enabling me to be more responsive to the moment. I did this through methods such as diary writing and being a participant/observer. I am trying to express this in my writing as an emergent process, linking heart, voice, mind and being. I believe that I brought these four key aspects together in my research, interrelated and intertwined, as they are in real life. In this way, we learn to braid together praxis (theory and action) and poesis (imagination and soul). I did this within a qualitative research framework.

Qualitative research framework

Qualitative research can be defined as

> an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less occurring phenomena in the social world (Van Maanen 1983, 9).

This approach enabled me to delve more deeply and personally into the complexity and uncertainty that I was experiencing within organisations. The danger I faced was one of overinterpretation i.e., "reading more into things than reason permits" or underinterpretation i.e., "less into them than it demands" (Geertz 1993, 16). I have probably done both.

The interrelated methodologies that emerged are represented in Figure 2.

Figure 2: **Research Framework**

Qualitative research approach	feminist perspective heuristics approach
Research methodologies	human inquiry fuzzy logic grounded theory
Research methods	participant/observer diary research learning group critical research friends

FEMINIST PERSPECTIVE

I employed many of the approaches used by feminist researchers, even though I did not undertake feminist research as such. I was involved in researching both emotionally, as well as intellectually.

[A] major feature of feminist epistemology is its refusal to ignore the emotional dimension of the conduct of inquiry _.[which] involves not only acknowledgment of the affective dimension of research, but also recognition that emotions serve as a source of insight or a signal of rupture in social reality (Fonow & Cook 1991, 9).

I have experienced so much understanding and knowing through my feelings and emotions, but have primarily focused on reason and logic at work. It was during the early stages of my research that I started to feel the dissonance. As I look back, I can see that frequently during my life I have been silent in the presence of 'authority'. I thought, felt and often intuitively knew 'the solutions', but lacked the confidence to speak out. I felt shaky and 'voiceless'. With this background, I started my research journey looking for objective, external answers and solutions to problems within organisations. I found it impossible to proceed along this path for long and I turned to my own, subjective knowing, undertaking my research through a 'feminist perspective'.

> I want to find my own voice
> I want to say what I want to say
> I want to have the courage to say it
> I don't expect you all to agree with me
> I know that you may see things differently.

I was involved in reflexive processes (Fonow & Cook 1991) and dealt "with dilemmas that have no absolute solutions" (Reinharz 1992, 4). I used my intuition to inform what was most appropriate for me to research and record.

Intuition and a nonsystematic approach to reading are cognitive/emotional processes that feel like feminist innovations to those who engage in them because they defy main stream definitions of how one should do scholarly work or science (Reinharz 1992, 232).

HEURISTICS APPROACH

Knowing the self and taking a personal stance was essential to what and how I researched.

Heuristics encourages the researcher to go wide open and to pursue an original path that has its origins within the self and that discovers its direction and meaning within the self. It guides human beings in the process of asking questions about phenomena that disturb and challenge their own existence (Douglass and Moustakas 1985, 53).

I filtered what I saw through my own 'window of the world'. I concentrated on those things that were important to me, that I felt touched my heart and that would sustain me through a number of years of research. As Hill (1997, 1) said, "it is more important to be clear about and follow your 'passion to inquire' than a 'methodology' ".

As my research and learning proceeded heuristically, it spontaneously took a path of its own and kept unfolding, like peeling off the layers of an onion. A good analogy, except that onions make you cry □ but so do organisations!

The fact that I was unable to clearly identify the problem within organisations sustained my research. According to Ulrich (1994, 22) if you can completely define a problem, you no longer have a genuine problem.

HUMAN INQUIRY

Many methodological processes supported me in my human inquiry, i.e., in making sense of human activity and experience and in combining both my objective and subjective approaches. I met with a Research Learning Group over a period of four years. I received feedback from a number of people who I considered to be my Critical Research Friends. They advised me on organisational issues and research approaches, and supported me in pursuing my research rigorously. I valued the support of each Critical Friend, in particular my research supervisor, Judy Pinn from the University of Western Sydney Hawkesbury, who sat with me during my uncertainty and confusion, and believed in what I was doing and always gave me the courage to continue.

I arrived with such confusion
I must be the only one to have ever felt like this!
This state is permanent
I will never be sure again
Who am I to add to the body of knowledge?
But one meets a guiding light
Understanding
Sure of the process
Have faith
Stay with it

It's all part of the process
And something exciting will come out of it.

PARTICIPANT/OBSERVER METHOD

I was a participant and observer in organisations that I worked in. I observed on a daily basis the crises and difficulties experienced by myself and others within the organisation, and listened to many views about the impact of change. As a participant, I was not always able to be an impartial observer and I was aware of the bias that I must have. However, in situations where motives, attitudes, beliefs, and values direct much, if not most of human activity, the most sophisticated instrumentation we possess is still the careful observer - the human being who can watch, see, listen ... question, probe, and finally analyse and organize his direct experience (Guba & Lincoln 1981, 212).

My research could be criticised as being subjective, centred in the self and dependent on my own analysis. Nevertheless, the strength of my approach is that it presents an alternative point of view from that of an impartial or semi-impartial observer. I believed that I could say some important things that could only be seen and said by a participant/observer.

My research led me to perceive that what organisations value are: tasks before relationships and learning; power and ego games before decisions for the good of others; doing before being; planning before values; focusing on 'what is' and not on 'what could be'. And I dreamed that it could be different.

I want to work in new ways
I want to try to do new things
I want to be ego-less
But I know that I can't quite make it
So, I continue to dream of how it could be.

FUZZY LOGIC

Fuzzy Logic supported me in moving beyond rational, numerical and linear thinking and analysing, to thinking and analysing in a way that matches our environment, which is filled with vagueness, chaos and uncertainty. Fuzzy logic makes room for alternatives and diversity and accepts that not all can be controlled and calculated. I looked at many issues from many points of view and there was no neat and tidy conclusion that I could draw. The answers kept changing as my awareness levels changed.

The theory of fuzzy logic was introduced in 1965 by Lotfi Zadeh, who mathematically computed with words instead of numbers to represent vagueness, which he saw as more realistic than precision. Zadeh (1996, 3) says:

The role model for computing with words is the human ability to reason and make decisions without the use of numbers. A case in point is the problem of parking a car. A human can park without making any measurements.

In social systems and research, the use of imprecise words and descriptions aren't usually tolerated. It's a difficult predicament, where time or funds spent have to be accounted for, yet effort and outcomes are often unmeasurable. (We just pretend to measure them). It's relevant and timely that the underpinnings of organisations and of research, and not just computing and engineering (where fuzzy logic was first introduced), be questioned.

New and 'fuzzy' ways include the need to set few rigid goals (Dimitrov & Kopra 1996). This would have to be one of the most challenging goals for both our research and our organisations, as it is fundamentally contrary to how they operate. That's why I have taken the approach that I have, as I wanted to see if anything would emerge from matching research method to experience in organisations. I involved myself in rounds of learning and change, sitting in the confusion often without plans or pre-set structures and solutions. And in the end, seeing how it does get better as we research our way to new understanding and practice.

DIARY WRITING

The method that allowed me to bring together all of the issues that I was grappling with in my research was diary writing. Diaries have always been a source of data collection in fields such as anthropology (Geertz, 1993) , action research (Kemmis & McTaggart 1988) and grounded theory (Strauss & Corbin 1990). Geertz (1993, 58) suggests that diaries can only be kept "spontaneously" and "colloquially", with perhaps an illusion that we know best about our own experience, and about the experience of others. This may be so.

I chose diary writing as my primary source of data collection because it enabled me to write regularly, personally, emotionally and intellectually. From the writing emerged interpretations and explanations that I could discuss with others. I relied on my own descriptions, which Van Maanan (1983) describes as fundamental to data collection in qualitative studies. I checked with my Research Learning Group and Critical Friends that my work was both objective and subjective, and used thinking form as well as feeling form. The Diary gave me a rich source of data.

GROUNDED THEORY METHODOLOGY

Grounded theory methodology can be defined as the "discovery of theory from data" (Glaser & Strauss 1967, 1). The theories that emerged during my research were about:

1. questioning assumptions underlying organisational theories and developing my own set of assumptions;
2. developing a whole-of-organisation model of complexity;
3. identifying the individual as the key to effectiveness within organisations;
4. acknowledging that human beings are unpredictable and consequently their behaviour in organisations is unpredictable;
5. observing that we do not behave as described in many organisational theories or organisational plans;
6. therefore there is a need to be guided by principles, relevant to the individual and to groups.

These theories emerged unexpectedly because I was working with a basic contradiction - method implies classification, but I had decided to research without a plan. A plan would only tell of my "desire to control a reality that is slippery and evasive and perplexing beyond comprehension" (Wheatley 1994, 26). I will have "reduced and described and separated things into cause and effect, and drawn the world in lines and boxes" (Wheatley 1994, 27 - 28). I've attempted to be linear and logical for most of my life - I now needed to do it differently. My plan would come out of my writing and not vice versa and I wanted to find the 'emergence'. I needed to prove to myself that it could be done. That it could be different to most working environments, where plans are imposed as prerequisites for outcomes, with an assumption that the beginning and end should be the same, i.e., as planned in advance.

Validity and reliability

In researching in this way, i.e., with understanding as the primary rationale for the investigation, the criteria for trusting the study are going to be different than if discovery of a law or testing a hypothesis is the study's objective (Merriam 1988, 166).

I have not attempted to achieve validity and reliability of my research findings through methods such as measurement and experiment. Instead, it emerges from the integrity with which I approach my subjective and objective experiences, and through the transparent audit trail and extensive documentation of the processes that I used.

Guba and Lincoln (1981, 213) suggest that "replicability of any given experience is less important in understanding human behaviour than is the recognisability of the description by those who lived the experience". Those who have read my work in progress have certainly 'recognised' the situations that I have described and the conclusions that I have drawn.

More than an external experience

I brought my whole self to the research journey - emotionally, spiritually, intellectually and physically. I believe that this is what we need to bring to our organisations.

My work may be seen to be more for myself than others. I particularly wanted to get to know myself better during the research process. However, as Krishnamurti (in Lutyens 1954, 12) says, "to know oneself is to study oneself in action, which is relationship". And through my own actions, in relationship with others, I wanted to help change the way things are within organisations. I looked deep inside myself and this was not easy to do.

Everyone can have noticed that it is more difficult to make progress in the knowledge of oneself than in the knowledge of the external world. Outside oneself, the effort to learn is natural; one makes it with increasing facility; one applies rules. Within, attention must remain tense and progress become more and more painful; it is as though one were going against the natural bent (Bergson 1992, 41).

Bergson (1992, 41) asks: "Is there not something surprising in this?" We would think that we know our internal selves best. However, our minds keep focused on external matters and when we do focus on the internal, it has a dramatic impact on our lives and our research.

> I jumped into the deep end of the pool
> To see if I could swim or not
> And sometimes I found people to hold hands with
> And other times I didn't.

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THE VALUE OF VOCATIONAL EDUCATION AND TRAINING IN A NON-METROPOLITAN COMMUNITY

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ABSTRACT

This study examines the question of how a non-metropolitan community consolidates and develops sustainable economic and social activity through the learning of community members. It includes an examination of the respective contributions of schooling, post-school education and training, and learning at work as well as learning at home.

Introduction

This study starts from the premise that learning occurs over a lifetime in a wide range of contexts outside of formal education, including in the workplace, community and home. Its methodology is oriented to collecting evidence of learning over a lifetime. It aims firstly to determine the ways in which learning at work, in community life and at home integrate in ways not detected by formal, linear or hierarchical models of skill and knowledge acquisition. Secondly, it anticipates that learning may not be confined to any one sector, and that much valuable learning may be informal or nonformal and occur in community and workplace settings beyond formal VET provision. Thirdly, it sets out to investigate the extent to which knowledge is valued outside the domain of specific industry, community or work sector.

In effect, the study explores the discrepancy between vocational education and training (VET) as a set of policy terms and programs and the reality of vocational learning, as experienced and valued by people in their everyday lives. This discrepancy is one significant problem in VET research in Australia (Falk 1998). VET research, like VET policy, also involves simplification of the complexity of lived experience for analytical purposes. In this study, we make out own necessary simplifications in order to approach the value of VET: for a small number of workers and community members (N=55) in one Australian geographic community. What we purposefully broaden, however, is the detail about the diverse forms, sites and sources of learning, and the value of such learning in community and workplace contexts for those individuals over a lifetime.

We also broaden the notion of value, as something which includes but goes beyond the formal, accredited, vocational and economic. Our broadening is deliberate. Public policy and research in VET has frequently become stuck fast (and generalised from) remotely measured economic data, phenomena, outcomes and dimensions based around involvement in formal VET (mainly TAFE) programs by individuals, often divorced from their workplaces or communities.

A large body of recent research questions the usefulness of only emphasising the economic dimension (Marginson 1993; Butler and Lawrence 1996; Hyland 1996; Lawrence 1997; Anderson 1997; Falk and Kilpatrick 1998; Childs and Wagner 1998; Billett et al. 1997; Falk and Harrison 1998b). Extensive and ongoing research at the Centre for Research and Learning in Regional Australia has focussed on other dimensions through opening the broader VET envelope of learning as it occurs in regional communities, a focus previously de-emphasised by emphases on 'capital V' VET, 'delivered' from cities through TAFE.

No previous research has measured the economic and vocational value of VET, incorporating the social, community and cultural aspects of life and learning for people over the course of a lifetime. This study investigates how each of these aspects integrate during moments of learning in both community and workplace contexts. It distinguishes between contexts of skills and knowledge acquisition and contexts of use. This distinction helps in understanding the value of all sources of learning when learning is used in any context throughout life. This conceptualisation also assists in an understanding of policies and strategies related to 'lifelong learning'.

VET is commonly construed, described and researched using public policy terms and assumptions based around an a priori definition of VET 'delivery'. It is widely assumed that VET is separate and distinct from other forms of training, and particularly from education. It is widely assumed that VET can be 'wrapped', as a 'training package', sold in 'markets' or 'delivered' as a training program. Once competencies are 'achieved', the learning can be 'articulated' (like behind a vehicle), taken somewhere else and 'transferred' for credit. Learning gets put on the shelf for purchasing in a metropolitan market place. Regional VET gets explained away as a thin market or treated in welfare terms as a community service obligation.

The lived reality in rural and isolated Australia is different. Vocational learning derives from a range of sources other than public provision in TAFE (Technical and Further Education). While it is possible and necessary to lump, divide and simplify learning generally, and VET specifically, into its component parts for research purposes, it is an integral but integrated part of people's lives. In the forthcoming full report of this study (Toms et al. 1999) we demonstrate this integration, but in doing so make necessary simplifications of lived experience, and in particular of learning.

Research into 'outcomes' from, and 'value' of VET, are subject to a number of problematic limitations and assumptions, particularly in rural and isolated situations where big city, big industry versions of VET do not fit what actually occurs in terms of either customer choice or VET provision. We have found that a useful, alternative way of wrapping both outcomes and values together is by focussing on the twin notions of social capital and the learning community. Putnam's (1993, 35) definition of social capital defines it as 'features of social organisation such as networks, norms and trust, that facilitate coordination and cooperation for mutual benefit'.

Falk and Kilpatrick (1998, 23) investigated social capital in regional community contexts as a process associated with many forms of rural learning, and defined social capital as 'the product of social interactions contributing to the social, civic or economic well-being of a community-of-common-purpose'. This definition has been used as a means of investigating VET as a social process well beyond its institutional 'packaged' and 'delivered' forms. VET, in its capital 'V', publicly funded forms is only one part of the wider, embedded process of vocational preparation and re-positioning occurring in rural and isolated community contexts.

Investigation, in the current study, of VET as an activity centred on one regional community is appropriate, timely and critical. Rural and isolated communities are currently recognised as bearing an inordinate social and economic burden as a result of National Competition Policy (NCC 1999). In its report, the National Competition Council recently conceded that '... the loss of a valued shop which provides commerce and a focal point for a small community can be a serious social cost, and could provide a case not to go ahead with a particular reform' (cited in The Age 8 February 1999, 4). The loss of such a traditional focus for sustaining community learning can mean a loss of the community itself. In this sense, as Putnam (1993, 33 & 37) suggests, social capital is a precondition for economic development. Or as Moore and Brookes (1996, 7) concluded, there is a direct relationship between economic development and community development. It is at the local, rural community level where there are no alternative consumer or citizen 'choices' that theories of markets and one dimensional economic policies and systems become least relevant but most damaging.

Magnified nationally, the widespread loss of government and community services in Australia has bitten deep into the sustainability of many regional centres and into the every day social and vocational lives of its residents. Some, but not all communities vanish in this debilitating process of change. Others develop community-embedded processes to sustain social organisation: in effect they seek to sustain social capital through building and rebuilding 'networks, norms and trust, that facilitate coordination and cooperation for mutual benefit', as predicted by Putnam (1993, 35). Learning, through VET and otherwise, is one important mechanism for sustaining such communities.

It is important to stress that social capital is not a phenomenon restricted to regional Australia. Networks, norms and trust play a similar important role for mutual benefit within communities in suburbs and cities, in businesses, offices and factories, in urban Aboriginal and migrant communities. The difference in regional Australia is that in many cases social capital, as it is created for mutual benefit in a small community, becomes the last line of defence to community survival and sustainability. VET in its many forms is a critical component of this sustainability, given that most of its young citizens are obliged to leave to undertake education and to get work in large but remote cities.

In regional settings, VET systems delivered, designed and predicated on the development of human capital for big companies and corporations are in danger of completely missing individual needs, those of small business as well as the collective needs of a community.

Research questions

A series of hypotheses are examined in this study.

- Social capital as generated through VET in its many formal and community-embedded forms should be observable in regional Australia.
- Informal learning is not only significant in the workplace (Sefton 1998, 4), but is also a factor enhancing the development and use of social capital in regional communities (Falk and Kilpatrick 1998, 16-17).
- There is a requirement of communities, particularly non-metropolitan communities, to become learning communities (Bruce 1998, 47) to facilitate individual and societal change (OECD 1996).
- Lifelong learning is likely to originate from a variety of sources and to 'contribute to an array of goals rather than to a single aim' (OECD 1996, 87).

The research questions emerged from a literature review which indicated a paucity of data in the literature on the value of VET. Where data does exist, it is generally couched in terms of quantifying benefits of different modes of delivery, completion rates, and qualifications gained rather than on perceptions of wider value.

The broad question posed to approach a resolution of the six claims above was "How does learning and training contribute to consolidating and developing sustainable social and economic activity in a non-metropolitan community?"

Two sub-questions were posed. The first was "What are the respective contributions of schooling, post-school education and training, learning at work and learning outside of work to sustainable social and economic activity? The second was "What are the possible frameworks for valuing the respective contributions of post-school education and training, learning at work and learning outside of work in a non-metropolitan community?"

In essence, this study attempts to answer the question posed by Law and Greenwood (1977, 95), when they asked

Cannot vocational education perform a larger, more important, inherently better function than it presently does and at the same time lose none of its present effectiveness?

Method

The current study was based in one non-metropolitan geographic area in Australia, using data from 55 audio-recorded interviews, together with survey data (in graphical form) completed by respondents, selected as being representative of both community and recognised industry groupings. It seeks to document how the respondents perceive the relative contributions of past learning to their present activities. That is, it asks "How is VET is valued in these people's lives?"

Interviews were conducted by two interviewers, combining a focussed interview process with open ended questions relating to the research questions with standard prompts. Data were primarily analysed using detailed manual thematic analysis supported by QSR NU*DIST and standard statistical collation and procedures. The approach employed was inclusive of informal learning as well as formal learning in a variety of contexts over a lifetime. In effect, it involved measurement and documentation of indicators and sources of social capital generation, as one way of recognising the importance of learning in one community in regional Australia.

The research used "community" in the sense of a physical location that has established boundaries. The community chosen, with a population of around 25,000 people, is one of 78 Australian centres with populations between 10,000 and 30,000 people (ABS 1996 Census). The site was chosen because of its non-reliance on any one industry sector, a demographic spread of population by gender and age and an ongoing presence of VET. The community has long been served by TAFE and adult and community education (ACE) providers and more recently private providers.

The sampling was purposeful in that the 55 participants were selected for inclusion based on the possibility that each participant would increase the variability of the sample. The sampling strategy aimed to include two major sub-groups within the community and to explore their inter-relatedness. The first targeted sub-group aimed to include two people who were employed in the seventeen industry groupings delineated by ANTA for benchmarking performance in VET (ANTA 1997, 7). The second included one person affiliated with groupings of community organisations derived from broad areas of interest.

As part of the interview process, an exploration was undertaken of the sources of learning in three contexts: in recent paid work, in community activities and in home activities. Respondents were asked to construct three pie graphs within given circles for each context. Within each circle, respondents allocated what they perceived at that time to be the relative value to them personally of five sources of learning. They were learning:

1. at school
2. through post-school qualifications
3. through work
4. outside of work from involvement with community groups
5. associated with home activities.

ABOUT THE INTERVIEW SAMPLE

Tables 1 and 2 summarise gender, age and labour force status of respondents. The sample was biased towards older, working males. The sample comprised around one third (36 per cent) females. Around three quarters (76 per cent) of all interviewees were aged over 40. While one half of the women interviewed were not seeking work, nine out of ten males (91 per cent) were in paid employment or self employed.

Table 1 Gender and age of interviewees by gender

Age group	Female	Male	Totals
Under 39	6	7	13
40-49	3	15	18
Over 50	11	13	24
Totals	20	35	55

Table 2 Labour force status of interviewees by gender

Current labour market status #	Female	Male	Totals
Paid employment	10	21	31
Self employed		11	11
Unemployed		2	2
Full time student		1	1
Not seeking work	10	3	13
Totals	20	35	55

Note: # some categories overlap

While the sampling technique focussed on two people employed in each of 17 industry types, it became clear that such a categorisation had changed over time. Only one third (36 per cent) of employed respondents had remained in their current (ANTA 1997 defined) employment sector for the term of their employment to date. In effect most people had worked in two or more employment sectors.

Similarly, while community respondents were chosen on the basis of one current community membership, all but one of the 55 respondents was involved formally with community activities of some sort. Around half of respondents were in sporting groups and around one quarter were in service clubs or self help support groups. More than ten per cent of respondents belonged to each of one of six other community group types. Indeed only 12 of the 54 respondents were current members of one group only.

LIMITATIONS

This study is concerned with people's perceptions of the value of VET in their lives. It does not claim to establish the categorical composition of forms of learning to present activities in any sense, apart from those of respondents considered strictly as proportional contributions.

Results

Figure 3 summarises mean values ascribed by interviewees to sources of learning by learning context.

Figure 3. Mean values (%) ascribed by interviewees to sources of learning by learning context
Value to:

SOURCES OF LEARNING	PAID WORK %	COMMUNITY activities %	HOME activities %
at work	38	27	20
in the community	17	28	24
in the home	15	17	29
post-school study	17	15	11
schooling	13	13	16
Totals	100	100	100

While the table indicates the complexity of the nature of learning, it highlights that non-formal and informal learning (particularly in the workplace, home and the community) contributes to a substantial proportion of an individual's learning. Conversely, formal learning through schooling and post-school qualifications were ascribed relatively a lower value.

Domains of learning

The post-school learning identified by participants was categorised into three main domains:

1. **formal learning**: post-school accredited VET or university

2. **nonformal learning**: structured learning on or off the job
3. **informal learning**: defined as 'incidental transmission of attitudes, knowledge and skills' (Coletta 1996, 22).

FORMAL LEARNING

Interviewees with formal learning (n=49) were asked why they had undertaken formal learning in five overlapping categories. While around one half (49 per cent) had undertaken such learning to obtain employment, much other study was also undertaken for essentially recurrent, professional reasons: to change employment (14 per cent), for career advancement (22 per cent), job security (24 per cent) and personal challenge (22 per cent). One interesting finding consistent with concerns raised by Billett (1998, 8) is that many interviewees (45 per cent) had at some point undertaken modules or subjects from courses rather than entire courses. This reflected specific needs at that time rather than the need for a completed qualification.

NONFORMAL LEARNING

Nonformal learning in Coletta's (1996, 23) view is learning that 'adjusts itself to accord with the changing demands of the life-cycle and environment', wherever and whenever those needs arise. In some cases these needs were found to arise in a workplace such as activities sponsored by employers on or off the job. Other nonformal learning was associated with learning about particular products or services and learning through community sponsored activities or non-accredited adult and community education classes.

INFORMAL LEARNING

Informal learning is distinguished from nonformal learning in Coletta's (1996, 22) typology as the 'incidental transmission of attitudes, knowledge and skills'. The corresponding learning which emerged from the data included learning through trial and error, mentoring, personal challenge (motivation) observation, experience over time, shadowing or doubling and responsibilities not associated with work or formal study. Much of that informal learning occurred through 'real world', 'on the shop floor', 'out there' learning, primarily through what interviewees described as 'trial and error'. It also included personal reading other than for formal study

Value of VET for life: some VET graduate views

While most VET graduates regarded VET qualifications as of high (46 per cent) or medium (32 per cent) usefulness, trade qualifications and higher level awards were more highly valued. What was particularly revealing was what interviewees regarded as their most important skill. While there were multiple mentions in the transcript data, two skills stood out: empathy for others (47 per cent) and communication skills (42 per cent).

Empathy was the most mentioned personal trait, and was commonly referred to as 'people skills'. It differed from communication skills, also highly cited, in that it indicated a relationship, a receptiveness or relatedness that allowed respondents to 'get along with' or 'work with others'. In many senses, empathy paralleled the key competency 'Working with others and in teams'.

The next most mentioned skills were empathy for employment tasks (18 per cent) responsibility for the job (15 per cent), problems solving and initiative (15 per cent), technical skills (13 per cent) and motivation (12 per cent). In effect, the most highly regarded skills were primarily non-technical. Many (eg empathy, motivation, adaptability) are difficult to formally acquire or objectively measure as competencies. A sub-set of most highly regarded skills include several of the key competencies (communication and problem solving skills).

Discussion and Findings

What is particularly striking from this comprehensive micro-study in one community is that while formal learning, including VET learning, has been important and valued for its role in getting 'an education' and a 'job', the most highly valued subsequent learning is non-credentialled, nonformal and informal. Further, much of that learning is community or work based.

This finding has important contra-indications to the line of thinking associated with the value of lifelong learning based solely around notions of the 'individual ' making a 'personal commitment' at 'personal expense'. Lifelong learning theory has to account for models which recognise that important and valued learning occurs well beyond self-serving individuals in an education market. Learning has value to others beyond the individual, and beyond the workplace. The value of VET and workplace learning also extends beyond the workplace.

This study reinforces the important role of the community as well as the workplace in facilitating and encouraging valued learning. Community activity and paid work generate nonformal and informal learning. This learning has valuable social and vocational value and currency. The value and currency of workplace and community learning, although not endorsed via a qualification system, has important social, community and economic associations, dimensions and values.

Community activity, unlike most paid work, is a voluntary social process occurring in a supportive environment, and is particularly conducive to learning. The difference between informal, nonformal and formal learning is that learning occurs through social processes of a community and in the workplace rather than as a pre-determined program outcome. The outcomes of informal and nonformal learning are flexible, they are determined by particular situations and participants. Whilst there is value in having certain, known learning outcomes, there is also a place for learning which is adaptable and produces customised and contextualised outcomes.

Conclusion and Implications

In summary, we conclude that

1. Work, community life, home learning and knowledge and skills use integrate in ways not detected by linear or hierarchical models of skill and knowledge acquisition.
2. While learning is not confined to any one sector, much valuable learning is informal or nonformal and occurs in community and workplace settings.
3. Knowledge is not (and does not remain) within the domain of any specific industry, work or community sector.

Our study indicates that: for those in recently in work, the highest value is placed on workplace learning, regardless of whether formal study has recently been undertaken. The study also highlights that learning at work and in the community are highly valued in community contexts, and that the learning at home is valued in a variety of contexts.

The findings of our study complement those of Golding, Marginson and Pascoe (1996, Table 9, 87). They investigated valued prior learning contexts for people with formal post-school qualifications from both TAFE and university sectors, and who were moving in either direction between those sectors. They concluded that work contributes most to the development of most key competencies. Work particularly contributes to the competencies associated with learning from experience (professional judgement), working in teams, solving problems and lifelong learning (learning on demand). Further, their study showed that while formal learning (in either sector) is also important for acquisition of skills associated with analysis of information, understanding systems and expressing ideas, that the home & other sources (presumably including community) are most important for skills associated with reflection, imagination and cultural understandings. Of all the key competencies, school was found to contribute most to mathematical skills.

The current study has several important implications. The first is for learners and communities in regional Australia with limited access to formal VET, for whom for informal and nonformal community and workplace learning are likely to be critical. The second implication is for community members who are either not working, not working in groups or not currently members of community organisations. Such people are in effect divorced from the opportunity to participate in the most valued forms of learning.

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SUPPORTING STUDENTS IN A FLEXIBLE LEARNING ENVIRONMENT: CAN IT BE MANAGED BETTER?

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ABSTRACT

The greater number of students utilising flexible learning has made student support increasingly difficult. The consequences of this are reflected in lower working and completion rates. At the Open Training & Education Network this problem is being addressed through the appointment of Student Learning Managers.

Distance Education

Distance education has established itself as an important part of the education system in Australia, primarily due to Australia being a country with a small population dispersed over a wide area. At the primary and secondary level the introduction of the 'Flying Doctor' service, and in particular, the vast radio network it provided, led eventually to the first School of the Air. Today twelve Schools of the Air throughout Australia are established, servicing over 1,000 students and covering an area of 1.3 million square kilometres (Wilkins 1997). The vocational education and training sector in New South Wales began delivering correspondence studies in TAFE in 1910. The first course being in Sanitary Engineering to address public health concerns arising from the Bubonic Plague and Typhoid outbreaks of the early 1900s. Australia was also a pioneer at the tertiary level in distance education, with the first off-campus degree program being offered by the University of Queensland in 1911.

For many of the students who chose to study in part or full utilising a distance education institution, the barrier to studying on-campus is not the physical distance to the campus but the need to have flexible arrangements. This occurs because time rather than distance seems to be the major element facing their decision to take up tertiary studies (Open Forum 15/10/98). As Hezel & Dirr (1990, 6) stated

> students find managing their limited time in view of competing demands from jobs, families, and other responsibilities to be the greatest challenge.

Distance education courses provide a way for adults to meet the needs of other commitments such as work and family, while still being able to gain or increase their formal knowledge and qualifications.

This need for flexibility in learning impacts on the type of teaching and support that occurs in distance education. Utilising media and technologies within distance education that require learners to be at a specific place and at a specific time, such as video-conferencing and audio-conferencing, are only of limited use for institutions. That is not to say that these instructional tools are not valuable within distance education, but for a large percentage of the students delivery essentially needs to be based upon the asynchronous correspondence model (Open Forum 15/10/98). The correspondence model essentially relies on written material - in the form of learning materials - and two-way communication via mail correspondence. The core element of most distance education programs today is still the correspondence model of distance education (Open Forum 15/10/98).

Correspondence education not only benefits the student but is also popular with providers of education, such as governments and business, when compared to conventional face-to-face education. This is due to the possibility of delivering education to a large number of students, who are geographically disparate at a cheaper cost (Lentell 1994). Lentell (1994, 50) realised that distance education is able to do this because, by its nature, it is able to separate 'the production of knowledge - the courses - from the learning of courses. The production of the learning materials and teaching is separate from the learning environment of the student. This facilitates one set of learning materials for a particular course to be able to be delivered, in theory, to infinite numbers of students.

This componentisation of the operations of distance education to achieve the considerable savings has led researchers, particularly Peters (1973 cited in Sewart 1993), to consider distance education a particularly industrialised form of teaching and learning. Rekkedal (1985, 61) believed that

> the rationalisation and industrialisation of distance education, which has been necessary to cater for large student groups and at the same time keep down expenses, results in a division of work and a depersonalisation of instruction.

This depersonalisation of the instruction changed the relationship between the teacher and student that traditionally existed in tertiary education. The elements of mass production that developed in correspondence education ended the students having a relationship with an individual teacher.

Potter (1983) decided to investigate student and teacher opinions on the correspondence model - referred to as the home study model by Potter - at Murdoch University in Western Australia. He undertook to assess student and teachers' opinions, through a mail survey, to determine their perceptions on the current modes of delivery and interaction. He then elicited their preferred form of external studies and amount of interaction with teachers.

The overall impression given by 84% of the respondents - both teachers and students - was that the current external studies process at Murdoch University was most adequately described as 'home study'. Home study being defined in the survey as

> the course-writer's responsibility was perceived to be the production of a comprehensive package; the tutor's responsibility was to mark assignments; and the student's responsibility to work through the course alone. Interaction between the student and the tutor was acknowledged to be minimal' (Potter 1983, 101).

However, the survey revealed that the preferred form of external studies experience identified by students and tutors was the *distance teaching* mode of external studies. This was described within the survey as

> the student is guided through the course by the tutor who supplements course materials with face-to-face and/or telephone-based interaction' (Potter 1983, 101).

This preference for the distance teaching mode of external studies suggests that the preference for a process that incorporated more interaction between the teacher and the student than occurs in home study or more commonly known as correspondence study.

This preference for greater interaction between the teacher and the student, is indicative of the isolation students feel in correspondence study. Harrington (1979 cited in Sweet 1986) suggested that the most frequently stated reason for non-completion in correspondence study was the sense of isolation. Cropley & Kahl (1983) found that the consequence of this sense of isolation was that the students were less confident about their ability to complete their studies. Towles, Ellis & Spencer (1993) agreed, saying that without the additional support of the institution, the distance learner is dependent on self-motivation to see each course to completion. Given that correspondence courses are largely self-paced, Towles, Ellis & Spencer (1993, 3) clearly identified that an institution rarely knows in advance that a student may be at risk of not completing.

The problem of students not persisting with distance education courses has not gone unnoticed. Powell (1991) noting that against the worldwide growth of distance education, there remained a major problem with high rates of attrition. The high attrition rates in distance education represent an unsatisfactory outcome for the students, for their teachers and particularly for the organisations concerned. As Scales (1984) identified, from an institutional perspective the wastage resulting from incomplete subjects and courses is a major concern, particularly at times of fiscal restraint. Distance education administrators, hence, are anxious to identify the reasons for students not persisting and approaches that will minimise non-working students and maximise subject completions. It is the management of the approaches to improve persistence in a flexible learning environment that is becoming the focus of student support systems.

Student Support Systems

Student support services are the interface between the institution and its students (Sewart 1993). There are many different student support systems in distance education, with the style of student support system depending on a number of variables such as the market aimed at, the delivery system and the culture in which it operates (Sewart 1993). It is the development of the student support system within the Open Training & Education Network (OTEN), the distance education specialist Institute within TAFE NSW, that is the focus of this paper.

OTEN is an Institute of the New South Wales Technical and Further Education (TAFE NSW) organisation within the Department of Education and Training. The role of TAFE NSW is to provide vocational education and training to a wide variety of industries, and also to provide basic and pre-vocational education. OTEN is the largest distance education provider in Australia, with student enrolments consistently above 30,000 each academic year, and approximately 750 staff, including 140 full-time teachers, 150 part-time teachers, and 610 off-site teachers. OTEN is divided into four (4) teaching faculties which relate to the general course orientation.

At OTEN, the student support system operates in two dimensions. Firstly, there is the Integrated Learning and Equity Support (ILES) department in the Institute. This department is dedicated to the support of students with specific needs, for example students with physical, learning, hearing, or visual difficulties and, through the Integrated Student Support System (ISSS), identifying and assisting working students who are encountering difficulties. ILES is well respected, being recognised as a model of good practice in the area of student support, especially in relation to integrating their services with other personnel and sections within the organisation.

The second dimension of the student support system within OTEN is that which occurs at the teaching level within OTEN. Individual learner support for all students within courses is developed and performed at the impetus of individual teachers or perhaps at a sectional level. Various strategies are devised by teachers, however formal evaluation of the approaches and communication of the strategies has been limited. The consequence of which are two fold; firstly the enormity of the work in implementing and evaluating strategies to increase retention has the potential to have innovative ideas to support students localised at the section, or at the worst, lost to the organisation. Secondly, strategies that had been implemented, if not evaluated properly, may be operating which are not effective approaches to student support for those students or may not be a useful allocation of resources.

This process of student support provided by the teachers has worked well for many years. It is the view of a Process Improvement Group within OTEN however, that the student support services offered to students within the teaching division could be augmented further utilising current physical, human, and financial resources. Research was undertaken on student withdrawals and completion throughout distance education to guide OTEN in its remodelling of student support within the teaching division. The research identified suggestions for OTEN in relation to ways to overcome retention problems of distance education students. These suggestions centred on an institutional approach to achieving student success.

One program of student support investigated that involved an institutional approach was that undertaken at the Mohawk College of Applied Arts and Technology in Ontario, Canada (Grevatt 1992). The student support management system developed was referred to as the Student Success Program (SSP) and was designed with three elements they believed were essential to student retention: (1) institutional research - which involves the systematic collection of student data, including demographic, withdrawal, and performance information, through the development of a student information system; (2) intervention strategies - which involves the systematic implementation of various retention programs across the college; and (3) evaluation - which involves the analysis of the various strategies, with the comparison of retention rates with courses not exposed to specific strategies (Grevatt 1992).

In relation to the first element of the Student Success Program, institutional research, OTEN has the services of a computerised student information system, the Open Learning Management System (OLMS). OLMS has been able to provide extensive information and reports on students and teacher progress for the last six (6) years.

The second component of the Student Support System, intervention strategies, as stated earlier has been occurring throughout OTEN. Various strategies within teaching sections to increase retention have been developed, including orientation sessions, course guides, regular teacher-initiated telephone contact, telephone tutorials, newsletters and fixed assignment submission dates. The promotion and detailed procedures of these strategies has been limited within the faculties. The consequences of this is for the wheel to be reinvented in relation to the implementation of retention strategies.

What was missing from the intervention strategies at OTEN was consistent evaluation procedures, the third component in the Mohawk Colleges Student Success Program. OTEN is not alone however in the need to increase evaluation practices. Grevatt (1992, 7) stating that

> Every college no doubt uses various strategies to enhance student retention in their programs. Where many colleges are weak however is in the area of student research and/or evaluation of their strategies.

Martinez & Munday (1998) in the Further Education Development Agency (FEDA) Report concur, asserting that far more attention needs to be paid to the analysis, interpretation and research within colleges.

The Mohawk Colleges' system of student support is coordinated from the Office of Student Success, which maintains a full-time coordinator, part-time statistician, and part-time research assistant. (Grevatt 1992). The coordinator for Student Success liases with the Consultative Team for Student Success. This team involves a group of volunteers from throughout the college, including faculty, support and administrative staff, who assist in the implementation and coordination of strategies.

This management structure suited Mohawk Colleges' particular circumstances, which includes a student base of 7,500 students. However, as Sewart (1993) pointed out, an institutions particular style of student support is not transferable to another institution, especially between different countries. He believed that an institution's student support system needs to be: constructed in the context of the almost infinite needs of the clients; dependent on the educational ethos of the region and the institution; dependent on the dispersal of the student body, elements of resource and the curriculum or product of the course production subsystem; and dependent on the generic differences in the student body which it has been set up to serve (Sewart 1993, 11). Sewart (1993) acknowledged though, that the principles underlying the construction of a student support system could be utilised. It was the principle of evaluation, highlighted in the Mohawk College's system, which OTEN would utilise more consistently in its revamp of the student support system provided within the teaching faculties.

Student Learning Management

Designing the new approach to the student support system within the teaching faculties of OTEN needed to incorporate a consistent approach to the principle of evaluation. A Process Improvement Group within OTEN viewed that this goal would be best met by having a coordinating role exist within each teaching faculty. These coordinators are termed the Student Learning Manager. They report directly to the Faculty Manager and are coordinated by the Integrated Learning & Equity Support Manager.

The role and responsibilities of the Student Learning Manager since its implementation in 1997 has been evolving. The position currently involves researching various retention strategies and coordinating the implementation and evaluation of these strategies within each faculty. This involves liaison with both teaching and administrative staff to facilitate the identification of appropriate courses and implementation of the strategies. Emphasis is placed on the communication of the success or failure of strategies between the faculty Student Learning Managers, with management and staff so as to inform discussion and assist with policy making.

As time progresses it is envisaged that the role will also include: (1) the formalisation of policy and procedures relating to successful strategies for wider implementation within the Institute; (2) longitudinal studies; and (3) differentiation of strategies based on the course, subject, and/or qualification level. The later two roles being identified by Martinez & Munday (1998) in the FEDA Report as in need of research in relation to drop-out and persistence in educational institutions.

Assessing the success of the Student Learning Management position as a student support service has been on the basis of increasing persistence (measured in terms of working and completion rates at OTEN) within the courses where strategies have been trialed and overall in the faculties. Utilising quantifiable student success rates as the method of assessment is supported by Roberts (1984) who believes that the effectiveness of student support systems will be shown in the reduction of the early drop-out phenomenon. Sewart (1993) agreed believing that the success or failure of student support methods would be through the use of student success rates as the performance indicator.

OTEN's computerised student information system OLMS is utilised to garner reports on student working and completion rates. Comparisons are made within courses with the students not exposed to the strategy to those who had, comparisons are also made against previous years working and completion rates. Based on current measures available on student working rates the Student Learning Management position has been successful, especially in relation to gains made on courses where specific strategies have been tried. For example, the courses which have had students exposed to Orientation sessions followed by faculty-initiated telephone contact have seen a three-fold increase in student working rates. Other strategies that have been implemented include faculty-initiated telephone contact, non-working students being sent postcards and letters, introductory video to OTEN, virtual tour of OTEN on disk, industry newsletters, and faculty guides.

Concluding Comments

As identified by Roberts (1984) distance education institutions vary considerably in operations, as such, procedures which may suit one particular college will not be appropriate for another. It may be that the system of student support established at OTEN in the form of appointing Student Learning Managers to each faculty may not be appropriate to any other institution. However, ensuring that the principle of evaluation is included in any student support system, especially in these times of economic constraint on educational institutions, would seem prudent.

What OTEN has attempted in appointing Student Learning Managers is to achieve a balance between the teacher's, student's and management's needs in relation to student support. At the teaching level, the Student Learning Manager's role has facilitated increased support of teachers in their implementation of retention strategies and the sharing of this knowledge with other teachers throughout the college. It has also seen the increased awareness of retention strategies with all staff and the importance of increasing working and completion rates. This achievement alone is important for OTEN. At the student level, the position has facilitated the trial of various strategies, which have been effective in helping students achieve their educational goals. The exploration of retention strategies has facilitated a greater level of customer service to our clients, the students. Finally, the increased emphasis on the research and evaluation processes is effective, especially for OTEN students, as it allows for the assessment of appropriate support strategies, and evaluates the impact of these strategies on working rates. This research and evaluation inclusive approach to student support assists in an effective use of resources, which is favourable to management.

The Student Learning Management position success in finding a balance between the needs of teachers, students and management will be evaluated in July 1999. It is at this time that management will determine the future of the position in the organisational structure, and if it continues the formalisation of the roles and responsibilities of the position. Regardless of the outcome of this evaluation it is my opinion that the position has been successful in increasing OTEN's awareness of the necessary role of evaluation in any future student support system.

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LIFELONG LEARNING: A NATIONAL POLICY RESEARCH NETWORK ON POST-COMPULSORY EDUCATION AND TRAINING

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Introduction

The goal of lifelong learning for all poses a policy challenge to governments. To achieve this goal, governments must encourage all individuals to participate in education and training throughout their working lives and ensure that the framework for education and training provision is conducive to lifelong learning. As lifelong learning involves increased participation in all types of education, structural divisions between schools, TAFEs, universities and community education providers can be barriers to ongoing participation. Governments need to develop cross-sectoral policies for education and training to help reduce unnecessary divisions between the sectors. To promote a cross-sectoral perspective on education and training, a national network has been established to undertake collaborative, cross-sectoral policy research.

Lifelong learning and government policy

> Lifelong learning means the continuous development of the skills, knowledge and understanding that are essential for employability and fulfilment.
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> Secretary of State for Education and Employment (1998) *The Learning Age: A Renaissance for a New Britain*. p. 11.
>
> There is little doubt that the nations which will succeed in the 21st Century will be 'knowledge societies' – societies rich in human capital, effective in their capacity to utilise and deploy their human resources productively and successful in the creation and commercialisation of new knowledge. In such a world there will need to be greater opportunities than ever before for lifelong learning – for preparation not just for the first job but for succeeding jobs.
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> Kemp 1999, *Preparing Youth for the 21st Century: the policy lessons from the past two decades*, Washington D.C. 23-24 February 1999.

The Ministerial Council of the Australian National Training Authority also supports the promotion of lifelong learning:

> Changes in the markets for Australian products and services, industry restructuring and technological change have all contributed to a growing acknowledgment that people need to upgrade and update their skills throughout their working lives. (Australian National Training Authority 1998)

While business enterprises will need to play a significant role in creating a learning society, governments must also develop policies to promote lifelong learning. There are two policy dimensions of lifelong learning that should be of interest to governments. The first is to ensure that all individuals have the capacity to undertake further education and training. The second is to ensure that the framework of education and training provision offers individuals access to wide range of educational experiences throughout their lives.

A lifelong learner is a person who takes responsibility for their own learning and who is prepared to invest "time, money and effort" in education or training on a continuous basis (West 1998, 43). However, some people are ill-equipped to embrace education and training on a continuous basis (Barnett 1994, Lamb 1998, McClelland at al 1997, Marginson 1997). For example, those engaged in work are more likely to participate in education and training than those who are unemployed. Whereas 80 per cent of Australian wage and salary earners are involved in training, only 30 per cent of people who are not in work are involved in training in the same twelve-month period. Low levels of participation in education and training are generally more likely to be associated with unemployment. More than two thirds of Australia's unemployed people have not completed Year 12 (ABS Cat. No. 6278.0). Governments therefore have a role in encouraging all individuals to develop the capacity for lifelong learning, particularly those who are not able to access training through the world of work.

As governments are responsible for financing and managing a large part of educational provision in Australia, they need to ensure that the policy framework for education and training facilitates lifelong participation. This means that people should be able to access education and training at any stage of their lives and be able to move between the sectors with maximum efficiency in terms of their learning. For example, students with a diploma in engineering from a TAFE institute should be able to progress to a degree without undertaking the full content of a university course. This would involve gaining admission to a university and receiving significant credit transfer for study already completed at TAFE.

In recent years, Australian governments have tried to remove some of the sectoral barriers to participation in education and training by promoting common standards and improving mechanisms for credit transfer between the sectors. The Australian Standards Framework (ASF), developed in the 1990s as a result of Industry Award Restructuring identified a set of eight levels of competence ranging from entry-level skills to advanced university research. The intent was to link these levels to pay rates. The ASF was never fully realised and it was later replaced by Australian Qualifications Framework (AQF). The AQF describes the key features and characteristics of qualifications across the secondary school -VET higher education continuum and links them to standards of performance expected of a person in the workplace (Kennedy 1997b). Credit Transfer mechanisms between VET and university have come under closer scrutiny and many more students now receive recognition in higher education courses for prior learning in TAFE. The establishment of several multi-sectoral institutions is facilitating the creation of "seamless pathways" between the sectors within those institutions (Kulevski and Frith 1998).

Nevertheless, a recent Parliamentary Committee concluded that it was still difficult for TAFE graduates to gain places in older, established universities, and that university practices in regard to credit transfer often discouraged rather than encouraged students to move between the sectors (Nelson 1998). Furthermore, in a competitive market where universities and TAFEs offer common awards, sectoral differences can be exploited for the purposes of gaining market share (Hill 1999). As Kulevski and Frith conclude, "although progress has been made, the VET/higher education interface is still struggling at the margins. This has been made worse by the different funding, regulatory and administrative arrangements for the two sectors" (Kulevski and Frith, 1998, 2-3).

Under the Australian Qualifications Framework, it is possible for schools, TAFEs, universities and Adult and Community Education (ACE) providers to offer courses that are also offered in other sectors. However, the different funding arrangements for each sector work against the growth of cross-sectoral provision. For example, schools are not funded at the level necessary to provide extensive vocational educational opportunities to students in Years 11 and 12. Australia's adult and community education sector is funded by many levels of government, a range of non-government organisations as well as private sources. Although it is possible for all institutions to offer some courses from other sectors, the extent of cross-sectoral provision is limited. Only 11 per cent of students at secondary school take TAFE-accredited subjects (ABS Cat. No. 6268.0). Higher Education awards account for 12 per cent of TAFE enrolments, and TAFE-level enrolments account for only 2 per cent of Higher Education provision (Nelson 1998).

Nevertheless, the changing nature of student demand is a continuing pressure for reform to the policy framework for education and training. Patterns of participation in education and training have changed markedly in recent years. There is now greater movement of students between the sectors, including from higher education to VET courses (Golding 1998). Increasing numbers of young people now follow non-linear education to work pathways that involve non-traditional, concurrent and/or sequential combinations of education and work

(Dwyer and Wyn 1998, Nelson 1998). The demand for VET courses in schools continues to grow, and customised courses for workers to develop specific skills are in greater demand within TAFE. The majority of students in post-compulsory education and training are combining study with some form of employment, increasing the demand for flexibility in education and training provision (ABS Cat. No. 6268.0 1998).

Although there is a strong imperative for education policy to be more cross-sectoral, it is difficult for governments to move beyond the sectoral perspective. Since the commencement of government involvement in education and training over a hundred years ago, education provision has been organised on a strict sectoral basis, with different Departments responsible for the administration of schools, vocational training institutions and universities. The involvement of the Federal government in selected areas of education provision adds a further complication to the funding arrangements. Universities - as autonomous institutions – are now almost entirely a Commonwealth funding responsibility. Both State and Federal governments provide funding for vocational education and training which is administered through the Australian National Training Authority (ANTA). Funding for schools is largely a State government responsibility, except for private schools that receive the bulk of their funding from the Federal government. The persistence of jurisdictional differences and the complexity of funding arrangements make it very difficult to develop common policies on issues such as course fees, access and equity, standards and qualifications across the education and training sectors. Recent Commonwealth reviews of education and training - while acknowledging the importance of cross-sectoral issues and lifelong learning - have nevertheless been confined to reviewing the needs of one sector (eg. West 1998, Nelson 1998).

The role of policy research

The Australian research community's capacity to examine cross-sectoral issues in education and training is limited by the same divisions that constrain cross-sectoral policy development in government. The sectoral division of responsibilities between government agencies is often duplicated in the funding of research activity. The sectoral interests of funding agencies influence the research interests of academics so that most education researchers specialise in one sector. Governments' capacity to develop cross-sectoral policies for education and training is hampered by lack of research on cross-sectoral issues, such as the changing nature of student participation in all the sectors (Lifelong Learning Network 1998).

In July 1998, the University of Canberra invited a group of education and training researchers with varying interests, to discuss the establishment of a cross-sectoral policy research network on post-compulsory education and training. It was suggested that the Network would fill the gap in policy research on cross-sectoral issues covering schools, vocational education, higher education and the adult and community education providers. The initiative was supported by representatives of DETYA, ANTA, and NCVER each of whom recognised the need for policy research to become cross-sectoral in focus. It was widely acknowledged that both policy makers and researchers were struggling to keep up with the changes in patterns of participation in education and training. There was a need for a new agency to sponsor cross-sectoral research that would complement existing research in the various sectors. Given the tendency of researchers to focus on one sector, it was important for the Network to take a collaborative approach to produce work that was relevant to education and training policy across the sectors.

The impact of policy research on government decision-making is highly contested - not least because of the difficulty in demonstrating direct links between research findings and the development of government policy (Wiltshire 1993). At best, one can argue that research has an indirect impact on government policy. Factors such as political mandates, social pressures, and interest groups also influence policy development (Bush 1976, Premfors 1979, Kirst at al 1981).

The impact of policy research upon government decision-making appears to be greater when government agencies are closely involved in sponsoring and supervising the projects, and where the researchers introduce, define and formulate policy problems (van de Vall and

Bolas 1979). In other words, policy research that is commissioned by government is more likely to have an impact on government policy. When governments sponsor policy research, they seek answers to specific problems within a limited time. Policy researchers in Australia generally retain the right to publish and disseminate their research findings without government interference (Robinson 1999, 8). However, the researcher's freedom over the objectives of the research may be restricted by the sponsoring agency's conception of the dimensions of a particular problem. It is therefore important for policy researchers to engage sponsors in a dialogue about the objectives and scope of their research. The Lifelong Learning Network has developed a process that facilitates a dialogue between researchers and policymakers at the earliest possible stage of its research projects.

Collaborative cross-sectoral policy research

The Lifelong Learning Network's major research activity is to investigate the changing nature of participation in post-compulsory education and training. In consultation with DETYA and NCVER, the Network has identified a broad set of research issues as a basis for developing its research program. Current research priorities are patterns of non-linear participation in education and training; the outputs and outcomes of each sector; access and equity issues; data on transitional pathways; and effective institutional structures. On 28 January 1999, the Network sent a list of these issues to its members inviting them to contribute to the development of briefs for each research project. The project briefs developed by the Network bring together the ideas of the sponsoring agency and the responses of Network participants.

The project briefs identify the scope and methodology of the research, an agreed budget, and the proposed members of the research team. The members of the research teams are selected on the basis of their relevant experience and the quality of their submissions to the project briefs. There are no sectoral barriers to participation in the Network's research projects. Researchers in VET, schools, universities and the adult community education sector are encouraged to participate in the collaborative research projects. This approach is consistent with the Nelson Committee's call for increased collaboration and research partnerships between TAFE and the university sector (Nelson 1998, Recs 4.3-4.5). The Research Advisory Committee of the Network's Governing Board oversees the selection of research teams. Professor Kerry Kennedy, from the University of Canberra, is chair of the Research Advisory Committee and its members are drawn from the funding bodies, presently ANTA, DETYA and NCVER. Once the Project Briefs have been approved by the sponsoring agencies, the collaborative policy research projects commence.

Although this process of developing project briefs takes time, it has advantages over conventional approaches. It gives the funding agencies access to a wide range of academic expertise at an early stage of the project's development. As most researchers tend to work within particular sectors, it enables us to bring together specialists in schools, VET, ACE or Higher Education on cross-sectoral research projects. By engaging researchers in the design of the project briefs, the Network promotes dialogue between researchers and funding agencies on the scope and direction of the policy research.

The Lifelong Learning Network

Hosted by the University of Canberra's Faculty of Education, the Lifelong Learning Network was established to undertake policy research network on post-compulsory education and training in January 1999. It is supported by an establishment grant from the Australian National Training Authority (ANTA) and project funding from the National Centre for Vocational Education Research (NCVER) and the Commonwealth Department of Education Training and Youth Affairs. The project funding will be distributed to education researchers across Australia who participate in the Network's collaborative research projects on cross-sectoral policy issues.

The Network is governed by a Board of academics and government policy makers, chaired by Professor Don Aitkin, Vice-Chancellor of the University of Canberra. Professor Frank

Hambly has been appointed Executive Director, Louise Watson is its Research Scholar, and Adela Clayton is the Network's Manager.

With a membership of over one hundred and fifty researchers and research institutions, the Network provides services to researchers interested in cross-sectoral policy issues. Through its web-site, the Network will manage a database of researchers in education and training. Members also participate in an electronic discussion list through which they can share ideas and information.

In December 1998, the Network hosted a policy workshop on post-compulsory education and training in Canberra that brought together education researchers and policy makers from Commonwealth and State agencies, including ANTA. The Workshop provided a forum for discussing issues such as participation, client choice, institutional structures and the changing social and economic environment. The Network is convening a national policy conference on post-compulsory education and training in Canberra on 27 August 1999.

Summary

Lifelong learning is a policy priority for education and training in many countries because of its importance to national economic growth and development. While Australia has a mass education system with relatively high levels of participation, many policy issues need to be addressed before we become a learning society. Traditional divisions between the education and training sectors remain a barrier to active educational participation because they restrict the movement of students through our education and training systems. Governments need to develop education policies on a cross-sectoral basis if they are to remove some of the barriers to lifelong participation in education and training and create a framework for education and training provision that is conducive to lifelong learning. Policy research on cross-sectoral issues can assist governments to develop options for reform. The Lifelong Learning Network was established to promote collaborative cross-sectoral policy research on education and training in Australia.

The Lifelong Learning Network is located at the University of Canberra, 170 Haydon Drive, Canberra ACT 2601. Membership is open to any researcher or policy officer who is interested in post-compulsory education and training. For more information, contact the Network by telephone on 02 6201 5357 or by email to: louisew@education.canberra.edu.au

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